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ORIGINAL ARTICLES.

A FURTHER STUDY INTO THE FREQUENCY AND NATURE OF CANCER.¹

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THE object of this paper is threefold: first to emphasize the ever-increasing mortality-rate in this State from cancer; secondly, to epitomize some of the more recent studies in regard to its etiology, and especially the arguments which point more and more toward its parasitic origin; thirdly, to bring to your notice the work already done and in prospect in the new laboratory started under the auspices of this State, and located in Buffalo.

With regard to the increasing mortality-rate, it would consume too much of your time if I were to read tables which have been carefully prepared from the returns of the State Board of Health, but the principal facts brought out can be briefly laid before you. These tables are, of themselves, a convincing argument in favor of collective study, and by public aid, as to the causes of cancer, since they show with regard to another disease whose cause used to be equally unknown that since the discovery of the peculiar organism to which it is due its mortality-rate has steadily declined. I allude, of course, to consumption. Since its cause has been known, intelligent and properly directed efforts have produced a very marked decrease in its ravages. On the other hand, the death-rate from cancer is steadily increasing not alone in New York State, but apparently in all parts of the world. There is, furthermore, every reason to infer that this increase will undoubtedly continue until its minute causes are positively determined. So far as we have been able to learn, cancer is now the only disease which is steadily upon the increase. This, of course, is a statement made without reference to the acute infectious diseases, like bubonic plague, etc., which have their own peculiar way of producing epidemic disturbances. In England and Wales, for instance, where most careful statistics are kept, the cancer death-rate has risen from 1 in 5646 of population in 1840, to 1 in every 1306 of population in 1896;

that is, in fifty years the proportion has increased nearly five times. All over this country the increase is quite as alarming, while the figures pertaining especially to our own State are equally significant, and quite incompatible with its increase in population. Thus, for instance, in 1887 there were in this State 2363 deaths from cancer and 11,609 from consumption. In 1898 there were 4456 deaths from cancer and only 12,552 from consumption. This increase in cancer mortality is certainly not due to improvements in methods of diagnosis, but rather the reverse is the case, since many cases which were formerly diagnosed as cancer are now properly classified where they belong in other lists. In none of the other diseases tabulated by the State Board of Health, nor in any Government reports, has there been such an immense increase as in cancer. It is the only disease tabulated which shows a progressive and steady increment by months and by years.

A careful study of all these tables permits one to make the following startling prophecy: If during the next ten years the relative death rates are maintained we shall find that ten years from now, *viz.*: in 1909, there will be *more deaths in New York State from cancer than from consumption, smallpox, and typhoid fever combined.*

It is most interesting, again, to see how cancer is particularly prevalent in certain regions. There is a recent report by Dr. Symons, Medical Officer of Bath, Eng., who has found that in his territory cancer is fifty per cent. more frequent than in neighboring localities. But the most extraordinary and significant topographical and statistical study of recent times is that of Behla, in the concluding numbers of the *Centralblatt für Bakteriologie* for 1898, which pertains to the little town of Luckau, in Germany, where, within the past twenty-three years there have been seventy-three deaths from cancer in an area covered by two or three city squares, as many as four deaths from it occurring in one house, and where the disease has assumed the proportions and the importance of an endemic. To this paper should be given the careful consideration of all who are interested in this study, though, to be sure, similar endemic appearances of the disease have been noted in other parts of the world, and in milder form may be said to have almost prevailed in time past in certain localities in Western New York, where the disease is exceptionally prevalent. Prob-

¹Read at the Ninety-third Annual Meeting of the New York State Medical Society, held at Albany, January 31 and February 1 and 2, 1899.

ably it is not necessary to do more than to rehearse these very brief facts in order to bring vividly to your minds this great and increasing source of danger to our population.

Next, with regard to the actual nature of this disease. First of all it is possible to sweep aside, with one or two possible exceptions, everything that has been brought forward until within recent years as an explanation of this disease. The old theories of irritation, of perverted nerve-centers, of heredity, etc., cannot for a moment stand in view of the searching scientific methods of to-day. We have gotten as far as this at present that we know that cells act as they do in producing the disease either as the result of some external or internal stimulus. The exact character of this stimulus is not yet certainly demonstrated, though things point more and more toward its parasitic, *i.e.*, its potent living influence. There are so many analogies between cancer and other diseases which are known to be infectious that these alone should be enough of themselves to almost convict, aside from the ordinary revelations of the microscope and the findings of the experimental laboratory. If cancer be an infection it must be acknowledged that, as a rule, it is exceedingly slow. This, however, does not prevent us from accepting such diseases as syphilis, leprosy, and others as in their essential nature parasitic. We know very well that infections vary within the widest limits in their intensity and rapidity of action, from those which kill within a few hours, such as yellow fever, cholera, and the like, to those in which two or three weeks are required, like typhoid fever, or those which ordinarily are much slower yet, like tuberculosis. No valid argument, therefore, can be made against the infectious nature of cancer based simply on the time limit. Whatever of value may be obtained from arguments concerning the nature of the tumors and cancers in the vegetable world is cast on this side, because an unprovoked tumor in the vegetable kingdom is an exceeding rarity. The only statements which help us as they come down to us from the writings of our predecessors are those concerning evident clinical facts, such as the direct transmission of cancer from one part of the body to another. We know now that tuberculosis is not inherited, though the predisposition to it may be, and we believe the same thing to be true of cancer. But anything which points to a direct inoculation from one individual to another is of incontestable value, whether recently observed or a thousand years ago.

Further analogy is found in the undoubted cachexia of its later stages, or let us say the more pronounced stages, of all the infections. Such toxic conditions we rarely get from any conditions save the

genuine infections. The supposed intimate relation which injury bears to cancer is of no more importance than that upon which the clinicians, and even the pathologists, used to place so much stress in tuberculosis. There are still those who claim that the predisposing cause of most tubercular joint lesions is previous injury of some character, and there are still those who look for a similar mechanical cause of cancer in virtually every case. What is there about injury, which, by itself, can produce at one time tuberculosis, at another syphilitic gumma, or at yet another cancer, save that either at the moment it has permitted a surface or deep infection, or that directly it has so far changed the vulnerability of the tissues as to permit of their more easy subjection to minute enemies from without? Trauma, therefore, must be disregarded save as it plays a subsidiary rôle.

The occurrence of cancer in certain families and its prevalence in certain localities, especially in the so-called epidemics of cancer which writers in various parts of the world have described, permit of scarcely any other explanation except the transmission from one to another of a *contagium vivum* of some kind.

There are, moreover, numerous analogies between malignant tumors and the infectious granulomata, to which the careful student cannot be blind. The characteristic reaction of the cells, the way in which they group themselves, their internal activities, their behavior in every respect, though not identical, are so plainly analogous that they cannot be disregarded. Moreover, the disease which any organism may produce is not necessarily characterized by the presence of its germs in a selected part, though this statement should perhaps be qualified by saying that at present our technic does not yet permit of their detection. This is particularly true of such diseases as tetanus and scarlatina, and probably of syphilis. This is, perhaps, to be explained by the fact which Orth and others have amply demonstrated, that bacteria can pass through certain tissues to find a resting-place in others at long distances, and yet leave no intermediate traces nor indications of their journey. Syphilis is, for instance, everywhere regarded as a parasitic disease, and is so viewed because the various steps of the infection can be traced, and yet we know less of the actual parasite of syphilis than of that of cancer. Indeed, there are numerous diseases whose infectious nature is established, yet the mechanism of whose infection has only been determined since the identification and study of the organisms at fault. In such diseases, for instance, as malaria and plague, the organism enters and leaves no traces by which to track it, yet no one dis-

putes their parasitic character, and one cannot afford to scoff at the infectious theory of cancer simply because we are still ignorant of the organism or the source of the infection.

Again, certain known organisms are well known to possess what we speak of as selective activities, as, for example, the ordinary pyogenic bacteria, tubercle bacilli and Busse's yeast-cells, which latter are capable of irritating the connective tissue, and thus producing a tumor much resembling sarcoma, which, however, after a time subsides. But this is no more than we see in certain malignant tumors in man, since sarcomata in human beings have been known to undergo spontaneous retrocession.

Then, again, from the standpoint of the histologist it cannot be forgotten that observers in all parts of the world have noted in and among cancer cells appearances which have everywhere provoked a suspicion of the presence of micro-organisms, but which have been variously interpreted. By some these have been called cell degenerations, protozoa by others, and fungi by yet others. It is remarkable to see how closely the pictures of these appearances, drawn by observers with these various and variant views, agree at least in this, that they all show something which does not belong to the cell, but is foreign to its proper structure and development, there being the closest correspondence between them in almost everything save the interpretation of the phenomena. This would indicate that our next advances must be made by improvement in technic. Certainly in time past one disease after another has been shown to be parasitic, the change of opinion being due entirely to advances in technical methods. Far as we think we have gone in this regard, there is yet no visible limit to what may yet be revealed in cancer as well as in other obscure conditions.

Every little advance even brings us something of value. For illustration, take the micro-organisms recently identified by Adami, which produce a peculiar cirrhosis of the liver among cattle of Pictou, or others studied recently by Roux, which are too small to be yet seen by the most powerful lenses constructed, which can only be seen when growing in colonies, and which pass through the fine porcelain that has hitherto been supposed to filter out all germs, and yet which produce well-marked lesions. Doubtless some one will soon make a lens with which these individual forms may be distinguished. As yet no one has done it. Again, there is no prophesying what the future may have in store for us in the way of new culture media and methods and improvements in experimental technic. What we most need now are better lenses, still more media, other stains and improved chemical methods. When we

recall what the chemists who concern themselves with aniline dyes have done for the pathologist, we have reason to expect great things of as yet unfamiliar materials. The experience of the past few years in the production of toxins and antitoxins has shown the necessity of much more minute knowledge of chemistry, and its application to this line of research. Numerous advances made of late also in chemical physics must be brought directly to bear upon this subject.

Hitherto, almost all the work done on cancer has been carried on in a most traditional and conventional way, and most of it is, consequently, worthless and must be all gone over again by the aid of the latest improvements. This is particularly true of inoculation work, which must be carried on along three lines of experimentation: (a) From animal to animal. This has succeeded in various isolated instances in the past, in the hands of numerous experimenters, and quite recently has been methodically carried out with a large measure of success in several laboratories. (b) From the dead human subject to the living animal. A remarkable illustration of this was afforded last year by Jurgens, who successfully inoculated animals with the fragments of sarcoma taken from a patient who had been three days dead, which seemed to indicate very strongly that it is not the human cells which are the infectious agents, but some persistent *contagium vivum* which they may thus carry with them. (c) Inoculation into animals of pure cultures of organisms taken from fresh human specimens. In this regard the largest measure of success seems to have fallen to the Italian experimenters, like Sanfelice and Roncali, whose labors in this direction are now quite well known. At Montpellier Bosc seems to have had some remarkable results, and in Gussenbauer's clinic at Vienna striking results have followed experimentation with melanotic sarcoma. Certain it is that our ordinary culture and inoculation methods must be extensively revised and modified. The organisms, whatever they are, certainly do not grow easily or successfully on ordinary culture-media, and new ones still more accurately resembling the human tissues have yet to be devised.

The microscopic picture of a section properly stained and prepared, in which one trained to this work can observe the bodies which we are convinced are parasites, shows everywhere their apparent reproduction *in situ*, as well as their multiplication by their own natural methods, which are probably not those with which we are most familiar, as well as their abundance in numbers, since if seen at all they are there detected in large number and over a wide tissue area. These changes are seen much more markedly

at the margin of the growth rather than in the center, where the contents of the older portions may be easily undergoing various degenerations. There would seem also to be a reasonably definite relation between the age of the parasite and the age of the cell, between the rapidity of growth of the two cellular organisms, and between the rate of development of the parasite and the evolution of the tumor. There is also apparently a pretty constant relation between the hypertrophy of the cellular elements and the parasites which they contain. In those now frequent cases in which it has been possible to inoculate from a spontaneous tumor in a given animal other animals of the same species, one always finds on examining the secondary tumors the same evidences and characteristics of parasitic activity as in the primary tumor. Tumors are frequent among fishes, for instance, and among them one may easily detect the presence of parasitic organisms in which the fluids and tissues of fishes are known to abound. This is true also of the coccidiosis of the rabbit, which has perhaps been too eagerly studied, and from which too stringent conclusions have been drawn. Bosc seems to have had remarkable success by spontaneous and deep implantation of fragments of tumors into animals of the same species, as also by intravenous inoculation, a method also which has given quite startling results in our own laboratory at home. Inoculations from one animal to another of differing species produce lesions varying all the way from sanguinolent effusions to distinct tumors, all of which have this most important experimental result in common that they show how a fragment of tumor known to contain parasites, when inoculated into a healthy animal, produces not the ordinary type of inflammatory phenomena, but a reaction of distinct and special type which almost invariably assumes the neoplastic form. Hanau and Morau have repeatedly succeeded in inoculating spontaneous tumors from rat to rat and have even been able to demonstrate a general cancerous invasion as the result of their experiments. In 1890 Eiselsberg successfully implanted a fibrosarcoma from one rat to another. Although the dog is here, as in most other experiments, the most resistant of all animals, Wehr has succeeded in transplanting malignant tumors of the prepuce or of the vagina, and in producing a general and fatal carcinomatosis, while Klencke has also had positive results with melanosisarcoma in horses.

But of still greater interest are the inoculations of cancer from man to man. Bosc alludes to three cases with which, he says, he is personally familiar, where he intimates that this had been done both intentionally and successfully, yet he is discreetly silent with regard to details. Nevertheless, there

are numerous instances of veritable auto-inoculation which have come under the observation of observers of large experience. Such, for example, as transplantation of cancer from the tongue to the cheek, the stomach, etc.; and for this matter, *why is not every metastasis as valuable for our purpose as a deliberate transplantation experiment?* Moreover, take the following instances, which are most instructive in their way: Waldeyer and Quincke have reported a case in which cancer followed along the track of the trocar which had been used for tapping a case of ascites due to abdominal cancer, and Sippel has published a case of cancer inoculation along each one of the suture tracks made after extirpating a cancerous ovary. Richardson has quite recently reported a case of invasion of the axilla along the line of a puncture made for the purpose of discovering the nature of a mammary tumor, and a New York surgeon had some time ago a case where cancer developed along the lines of incision made for relieving tension in the endeavor to close a large wound made by removing a cancerous breast, these incisions having been made with the same knife used for operating upon the primary tumor. Indeed, one of the most eminent of my surgical friends has told me quite recently that he will never use the same knife for cleaning out the axilla which he has used in removing a cancerous breast. There is also the celebrated case published by Cornil, in 1891, of a woman having a large tumor of the breast in which a surgeon, name not given, yet known, after its removal inserted a small particle of the growth beneath the skin of the breast on the opposite side. Although the small wound thus made cicatrized without trace of inflammation, a nodule formed at that point within two months, whose subsequent microscopic examination revealed unmistakable cancer, the growth in each instance being a spindle-celled sarcoma, in whose cells mitotic activity was most pronounced.

Note the experiences, also, of other men. Years ago Langenbeck made a watery emulsion of a soft cancer, filtered it, mixed with it the defibrinated blood of a dog, and then injected it into the femoral vein of another dog. Two months later nodules were found in the upper lobe of each lung and a hard vascular tumor in the middle lobe, which proved distinctly cancerous and resembled the original. Follin and Lebert did the same thing with a cancerous lymph-node from the axilla and within fifteen days found in the animal small cancerous nodules in the lungs and liver. Goujon has produced melanosisarcoma in small animals within fifteen days after inoculation. In 1893, Mayer published a case of successful inoculation of encephaloid cancer from man

to the white mouse. Bosc has had repeated, though not uniform success, in producing various sized tumors beneath the skin, within the abdomen, etc., and has found the best results when rigid asepsis is maintained and the inoculation made by abdominal section, especially when the fragments introduced are of considerable size and are taken from the actively growing parts of the cancer. Not the least interesting of his observations are those showing the apparent ease with which these parasites, when planted on one side of the diaphragm, traverse it and involve viscera on the other side. This speedy transference between lung and spleen, for instance, he has repeatedly noted and it well illustrates the ease of lymphatic communication through this partition. In all this work it is to be understood that there is practically uniform reproduction of the histological characteristics of the tumor experimented with. So far as I know, there are no observations anywhere reported showing that pieces of healthy tissue introduced into animals under any circumstances ever produced anything resembling a malignant tumor.

There is no reason to think that the parasites which produce sarcoma are essentially different from those which produce carcinoma. The principal differences obtain in that the parasites of sarcoma as a rule present more active changes; in other words, their life history is much shorter and more active. The giant-celled sarcomas seem to be distinguished from the round-celled principally by the presence in the former of relatively larger masses of parasitic organisms.

We may say, then, that malignant tumors are such by virtue of certain specific, *i.e.*, parasitic elements which they contain, and in many respects are analogous to the infectious granulomata, which we now know to be due to other specific organisms. Their peculiar characteristics are in the main due to more or less regular cell proliferation and distinct hypertrophy of cell elements. They manifest a tendency toward alveolar arrangement, with a preference for epithelial cells and the formation of certain cell aggregations, such as pearly bodies and cell inclusions, as well as toward cystic changes by colloid or mucoid degeneration. Practically, all of the characteristics of cancer are explainable by the now well-known activity of parasites, which tend to maintain for the most part an intercellular life, and which rarely penetrate the cells themselves except in search of pabulum or as the result of pressure.

Cancers propagate themselves in various ways: (a) By contact as from one lip to the other; (b) by continuity of tissue as in cancerous infiltration; (c) by transportation as when we see minute ulcerations

about the nipple or along the milk-ducts in cases of cancer of the breast, and (d) by metastasis to a distance along lymph-tracts, while at the same time no traces of their passage along these vessels can be demonstrated. There is finally a possibility of (e) conveyance along the veins or blood-vessels, which certainly is unmistakable in numerous instances. Nepveu and numerous other observers have insisted that they have found cancer parasites in the blood, either from the vicinity of tumors or at a considerable distance. They claim to have seen these in the interior of the red corpuscles.

I have already alluded to the frequency both of tumors and of parasites in fishes. Bosc has referred to a most interesting case of a young man who, in eating raw trout, had a perforation of the tongue by one of the sharp so-called bones of the fish, and who withdrew a small portion of the broken-off structure. Some days later there was continued irritation and on the fifteenth day there was extracted from a painful, sensitive area of the tongue a considerable fragment of the same bone. From now on there developed at this point an unmistakable epithelioma which grew rapidly and killed him in about a year from the time of the injury. Bosc maintains also that the small fish, which one eats entire without regard to the little bones which they contain, constitute by themselves a source of danger of infection for the stomach and the entire alimentary canal. He shows also that cancer of the stomach is extremely common where people eat freely of this kind of food. If one will take pains to study insect life minutely he may constantly find in the intestinal tract, or in the general abdominal cavity, evidences of cystic degeneration and other alterations due to the presence of micro-organisms which are often at least sporozoa. Throughout those parts of the country where cancer is frequent and where insects and lower animals are constantly present and in contact with the body, as upon the clothing, skin, etc., there would seem to be more or less of actual relation between their presence and the development of external cancers, a relation accentuated by the notoriously uncleanly habits of many of the lower classes. Take the case of a nursing mother with a more or less exposed nipple. It would be possible for one insect upon the skin in the immediate neighborhood of this possible port of entry to elaborate any number of spores or micro-organisms which might serve as infecting organisms. The contaminated fingers and a contaminated water-supply might also serve as means of transport. The rôle which bed-bugs may play was demonstrated by Morau with small animals some years ago and was described in a paper published by myself last year.

Let us ask again, Is cancer actually contagious? Answer in the affirmative would seem to be dictated by such cases as the following: Kuhn has reported the case of a woman who contracted an encephaloid cancer of the finger while caring for a cancerous cow. Hyatt, in 1885, reported a case of inoculation of melanotic sarcoma from horse to man, and Gross claimed to have seen two cases of transmission of cancer from domestic animal to man. Juergens has reported accidental inoculation of epithelioma from a fowl to the thumb. Conversely Budd has reported the instance of a pet dog which contracted cancer of the tongue from licking the cancerous lip of his master. Bosc states that animals living in laboratories where cancer experiments were frequent became themselves affected. Evidences of communication from man to man are numerous. Lusitanus long ago, for example, reported a case of three boys who presented each a cancer of the breast after having for a long time slept with their mother who had a similar disease. Smith has cited the case of a London hospital surgeon who was affected with cancer of the tongue after having taken into his mouth some of the discharge from a cancerous breast. Transmission to husbands of cancer from wives affected with uterine cancer have been reported by numerous surgeons, and Guéniot has collected reports of twenty-eight such cases. Budd refers to the fact that at least five French hospital surgeons have died of cancer. Emson died of cancer eight months after having injured himself during an operation upon a cancerous patient. Two years ago Guermontprez reported the case of a physician who suffered from cancer at a point where had existed an acne pustule which he had infected during an operation for scraping a cancerous uterus, and the reporter himself suffered for a long time in a similar way. It is notorious that the skin and the various orifices of the body, including the pylorus, the os uteri, etc., are the most favored sites for cancerous development. This is to be explained not alone on embryological grounds but because they are the most exposed of all the parts to infection. One could multiply arguments and statements of this kind indefinitely were he to hunt through literature for the purpose. Surely enough has been already stated to reasonably prove the thesis upon which the second portion of this paper is based.

Lastly, let me invite your special attention to work recently done and projected in our own State. Last year, as the result of persistent efforts on the part of a number of individuals, professional and laymen, both in and out of the Legislature, the Legislature of New York appropriated a small sum for the purpose of "equipping and maintaining a labora-

tory" devoted to this kind of research. The money was placed at the disposal of the Medical Department of the University of Buffalo, which seems to be located in a region where cancer is more prevalent than in any other part of the United States. The laboratory was at once instituted and put in operation, the writer of this paper being made its Director; and the pathological work was soon placed in charge of Dr. H. R. Gaylord. The equipment of the laboratory is of the very best and the personnel of its working staff admirably adapted to the work in hand. Were this the proper place I could tell you much of their zeal and untiring effort in the work. The primary object of this institution is a determination, if possible, of the nature of the disease, secondary to that, of course, being whatever may be accomplished for its medication and cure. The heartiest cooperation of the profession has been publicly invited and already in many instances obtained. The closest relations exist between the laboratory itself and the clinical opportunities which the university affords, so that by this means there may be the most careful study carried on at the same time of the patient himself and of the specimen removed. The work so far as projected includes everything that may be done in the way of clinical study of cases, especially those which are under the personal observation of members of the laboratory staff, a most careful study of the pathological and histological elements found in every fresh specimen removed, a carefully conducted bacteriological examination with systematic endeavor to cultivate in every known culture-medium whatever living parasites may be obtained. Just so soon as means and space are afforded it is intended to conduct also most minute investigations into physiological chemistry, including chemical and spectroscopic examinations of all the fluids, chemical analysis of secretions, etc. How much of real value may be accomplished by such study is briefly foreshadowed, for instance, in the paper of Moraczewski (*Virchow's Archiv*, vol. 139, page 385) upon the amount of chlorin and phosphorus in the blood of cancer patients, who showed that while in almost all forms of anemia there is a reduction of the amount of phosphorus, in the anemia of cancer there is a relative increase in the amount of chlorin. The value of a careful determination of this and various other similar problems in diagnosis is simply inestimable and is all in the direction of facilitating earlier diagnosis. If we are ever to have a successful internal remedy for cancer we must learn to recognize cases earlier than is at present possible and every method of this kind must be assiduously cultivated. Such a problem as the above, or the alleged presence of sugar in

the blood in sarcoma, or peptone in the blood in carcinoma, etc., need to be all worked out anew. So soon also as the State places sufficient means at command it is intended to institute a series of examinations of whatever specimens may be sent us, just as at present in various city laboratories suspected sputum or exudate is examined for the determination of diphtheria, tuberculosis, etc.

It is, of course, altogether too soon to enter upon any detailed or systematic report of results obtained. To attempt anything of this kind now would be premature and unfortunate. I do want to say this, however, that results obtained already within the past six months have been almost startling, or even dramatic, and give promise of great advance in our knowledge in the future. In virtually every case of cancer yet examined where we have had access to the fresh specimen it has been possible by improvements in technic, which are due to the ability and ingenuity of Dr. Gaylord, to find bodies which cannot be other than parasites present in vast numbers. These are undoubtedly the same bodies which some observers in time past have called cell-degenerations, others fat-globules, but which are now quite generally recognized as parasites; though opinion is still divided as to whether they are sporozoa or fungi. They can now be demonstrated in our laboratory to any one who will take sufficient interest in the problem to come and see for himself. Their life history is now being carefully studied both by culture and inoculation work with results that are in some respects exceedingly satisfying and in other respects exceedingly promising. It will be enough for the present if I say that both cultures and inoculations have been so often successful as to leave no doubt in the minds of those who are doing this work that cancer is unmistakably a parasitic, *i.e.*, an infectious disease.

NASAL CATARRH IN CHILDREN; ITS CAUSE AND TREATMENT.

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(Concluded from page 363.)

We come now to atrophic rhinitis, and this is by no means an uncommon affection. How frequently we find, even in children five and six years of age, both in dispensary and private practice, evidences that an atrophic process has commenced. We rarely see this condition at a younger age, but from the sixth year on we should say that it is present in some degree in ten per cent. of our cases. We do

not often see the extreme condition of atrophy and dryness before young adult life, but in ten per cent. of the cases in children we find that the nostrils are too roomy because of shrunken turbinated tissues, and the mucous membrane generally has a grayish appearance, and is dryer than normal; the secretions, too, are no longer sufficient to keep the nasal passages moist, and we detect a tendency to the formation of small crusts. I know that many writers contend that atrophic rhinitis does not commence much before the twelfth year, but I frequently see the early stages of it in children six years old. The question has never been satisfactorily settled whether atrophic rhinitis may not be a later stage of hypertrophic trouble. It seems to me that in the majority of instances this is not true, but rather that there is in these cases from the beginning a special predisposition to atrophy. If atrophic rhinitis were often a later stage of a hypertrophic process we would all have abundant opportunity of witnessing the period of transition from one process to the other. I believe the same conditions can in one child produce a hypertrophic process, and in another an atrophic one. We frequently see remaining in fairly well advanced cases of atrophic rhinitis, in children twelve years of age, some enlargement of the third tonsil, although there is a strong tendency in these cases to atrophy of all tonsillar tissue. The conditions of life certainly have an important bearing upon the development of atrophic rhinitis because we see it much more frequently in dispensary practice than among the better classes.

The great disturbance of the mucous surfaces during the eruptive fevers undoubtedly determines many atrophic catarrhs. Such a condition as a pharyngeal vault blocked with adenoids which constantly create acute coryzas and cause the nostrils to be filled with a mucopurulent secretion would naturally contribute largely to the causation of atrophic rhinitis. We have here mechanical, physiological, and chemical causes at work which together are quite competent to destroy the epithelial covering, to diminish the blood-supply, to compress the mucous glands, and to produce atrophy. It does not seem necessary to place too great importance upon constitutional tendency when such potent local causes are present to devitalize mucous and submucous structures. Atrophic rhinitis occurs more frequently among the poor than among more fortunate people because in the first instance the nasal passages are apt to be wholly neglected, nor are post-nasal adenoids or enlarged faucial tonsils removed. Once the nostrils are thoroughly closed and the secretions become decomposed nasal bacteria are able

¹ Read before the Section on Laryngology and Rhinology of the New York Academy of Medicine, November 23, 1898.

to attack the nasal tissues. Why is it not possible in the condition of obstructed nostrils just described that in the child of healthy surroundings in whom the nasal passages are partially cleaned, hypertrophic changes take place, while in the neglected patient the extreme unsanitary conditions of the nostrils tends to atrophy?

There is no time in this paper to describe pathologic appearances and symptoms, nor is it necessary, because you are all perfectly familiar with the appearances present in an atrophic rhinitis. There is no question in my mind but that very many cases of atrophic rhinitis could be prevented or aborted by thoroughly treating catarrhal conditions when they first appear in babies and young children.

I have never believed that the term *ozena*, either in children or adults, should be applied to a special disease. It seems to me rather to be the proper name of a symptom, that is, a fetid odor, which accompanies many conditions. It does not require much consideration in connection with diseases of children, although Carig says that *ozena* extends back to earliest infancy and that family practitioners are familiar with cases at the age of four. A large number of dissections have been made by Zuckerkandl¹ with the object of ascertaining if *ozena* might not be a sort of congenital atrophy or congenital anomaly of the nose, but he was not able to substantiate this. Störk believes that *ozena* results from nasal gonorrhea and so dates from birth, or that it is a manifestation of late hereditary syphilis. The majority of writers prefer to think that it is a symptom of such various causes as a suppurating pharyngeal tonsil, decomposed pus in the accessory sinuses, necrotic bone, foreign bodies, collections of leptoithrix masses in the post-nasal space, or the decomposition and retention of secretions anywhere in the nasal passages. Grünwald says that "clinical *ozena* is made up of a variety of suppurative processes." I see in the writings of many authors a disposition to the belief that atrophic rhinitis and *ozena* are synonymous, the latter being an extreme type of the most advanced stage of the former. If *ozena* is a special disease, that is, depending on a special germ and always producing characteristic pathologic changes it has up to the present time not been clearly recognized. Using the word *ozena* in its original sense of an offensive discharge as first used by German authorities it certainly represents not a disease but a symptom. Bacteriology would naturally decide as to the existence of a special disease called *ozena* and make the differential diagnosis between it and atrophic rhinitis.

¹ Zuckerkandl, *Normal und patholog. Anat. der Nasenhöhlen*, Wien, 1882.

Several investigators believe that the bacillus mucosus or the bacillus of Loewenberg and Abel is the cause of *ozena*. There is no reason, however, why this bacillus should not develop in any purulent or mucopurulent secretion. A theory that *ozena* is a natural sequence to an atrophic rhinitis is based on the belief that in an atrophic process the bactericidal power of the normal secretions is greatly diminished or lost; hence, in a given case of atrophic rhinitis a bacteriologic test which would show Abel's bacillus in large numbers would be the only scientific method of making the diagnosis between an atrophic rhinitis and the condition known as *ozena*.

I am sure I have said enough to make it plain that I believe enlargement of the pharyngeal tonsil is more frequently the cause of chronic nasal catarrh in children than any and all other conditions connected with the nose and throat. I was glad to find in Dr. Holt's book, in the chapter on "Adenoids," the statement that "it is a very common and by general practitioners a much-neglected condition and is the source of more discomfort and the origin of more minor ailments than almost any of the pathologic conditions of childhood." This adenoid enlargement is common to all classes of children under all conditions. It is very probable that the exciting cause which creates this enlargement is neglected nasal catarrhs and the acute coryzas accompanying the eruptive fevers, and that as soon as the nasal chambers become blocked by swelling and discharge and mouth-breathing becomes necessary the post-nasal adenoid increases rapidly in size. Enlargement of the faucial tonsils is usually secondary to that of the pharyngeal tonsil. Enlargement of the pharyngeal tonsil is sufficient to cause congestion, thickening, and catarrhal discharge of the entire mucus surface from the nose to the smaller bronchial tubes.

In bringing to a close our remarks in regard to the causation of nasal catarrh in children in its various forms I should like to emphasize my belief that ninety per cent. of the cases of so-called chronic catarrhal rhinitis are caused by enlargement of the post-nasal lymphatic tissue and the resulting nasal obstruction. We believe that true hypertrophic rhinitis in children is rarely seen and that deviations of the septum, except from traumatic causes, are conditions which seldom provoke a chronic catarrh. It is our belief, also, that the presence of post-nasal adenoids is sufficient to constantly occasion acute attacks of rhinitis which eventually become chronic, more often in an atrophic than in a hypertrophic form. In most cases if the adenoids are removed by operation fairly early, the hypertrophic changes which seem to exist in the occluded nostrils will

disappear and the nasal passages will become practically normal.

If, then, post-nasal growths and enlargement of the faucial tonsils are so frequently the cause of the various forms of nasal catarrh in children the treatment would seem to be very clearly indicated. It is almost impossible to use douche or spray satisfactorily for cleansing purposes in occluded nostrils until enlargements of the pharyngeal tonsil have been removed by operation. We have never known any internal medication to be sufficient to reduce such enlargements, and it seems to me a waste of time and a harmful policy to delay operation while attempting to improve the general health of the child even by such excellent remedies as cod-liver oil and iron. You are all so familiar with the disastrous results of long-standing cases of post-nasal adenoid that it is unnecessary to even advocate their removal by proper operative measures, that is by the forceps, or curette, or both. A most excellent discussion on this subject will be found in the "Transactions of the American Laryngological Association" for 1898, in which will be found the views of many experienced physicians. Mouth-breathing children should receive prompt attention, and obstructions should be removed before hearing is impaired, the shape and expression of the face altered, the lung tissue restricted in volume, chronic bronchitis occasioned, and the general constitution impaired for all time. If it is impossible to examine the post-nasal space with a mirror, and it is a difficult thing to do in a small child, I am in the habit of making the diagnosis with the curette itself. If there is no enlargement of tissue no harm is done; if there is, the curette will find it and remove it, and then proper directions can be given to the parent for cleansing the nostrils and delaying irritation. It is a painstaking operation to excise faucial tonsils and to *thoroughly* eradicate post-nasal growths. It is not pleasant to have children brought back after operation still breathing through the mouth, and to find some part of the pharyngeal tonsil remaining.

It is not within the province of this paper to describe in detail the operation for the removal of adenoids. I think it is usually best to give an anesthetic, and I prefer ether because I consider it safer than chloroform. I have performed the operation a great many times, and have had no difficulty with ether. A very important caution in operating is, I think, to proceed slowly, and to wait for hemorrhage to cease from one point before removing tissue in another. As there is an abundance of time it is never necessary to excise both faucial tonsils at once, but is better to wait a few moments until the bleeding from the first has stopped and later the

nasopharyngeal tonsil can be removed. A mouth gag should be used, secretion wiped away from the

FIG. 1.



Cutting forceps for the removal of adenoids.

pharynx, and first the cutting-forceps (Fig. 1) should be carried to the roof of the upper pharynx, and a

FIG. 2.



Adenoid forceps.

large portion of the tonsil removed with this. Perhaps the cutting-forceps should be introduced two

or three times until almost all the tissue has been removed, and then the remainder can be taken away with the curette (Fig. 3). There are three ways of determining if all tissue has been removed; I make it a point to use the curette until the surface feels perfectly smooth as the instrument is pushed up and down. The finger, too, will be of assistance in determining whether any tissue remains, and in exceptional cases it will be feasible to use the post-nasal mirror. If the faucial tonsils are very large I think it is better to remove them first in order to get increased breathing space before the nasopharyngeal tonsil is removed. If the operation is thoroughly done and good drainage is established there will rarely be any septic results; but if the tissue is only partially removed it is possible that middle-ear inflammation, or follicular tonsillitis, or inflammation of the lymphatic glands will ensue. I do not often prescribe a nasal wash directly after the operation, because I have never felt that there was any necessity when the operation was thoroughly done and good drainage established.

Perhaps we should say, in passing, that there are a few cases, usually traumatic, in which at the tenth or twelfth year there is sufficient deviation of the nasal septum to require removal of the projecting surface. Once all obstructions are removed the treatment of nasal catarrh resolves itself into proper cleansing and the application of disinfecting, protecting, and sedative remedies. It is quite as important to study *how* the application of medicines can be made to the sensitive mucous membrane of children in the most comfortable manner as it is to select the drugs themselves. We think that with proper instruments for atomizing and for inhalations remedies can be carried to the upper air passages in an efficient manner without the necessity of forcibly swabbing the throat of a resisting child with brushes. Sprays or applications which are strong enough to produce irritation should never be carried into the nostrils. Cleansing with proper alkaline sprays and protecting either with disinfecting powders or oils seem to me to be the proper objects to be accomplished. In some children a simple one-bulb atomizer filled with Seiler's or Dobell's solution accomplishes the purpose, but if this produces sneezing then the nasal douche cup should be substituted, the liquid always warm, and the child's mouth always kept open to prevent the entrance of the medication into the Eustachian tube. Such solutions as Seiler's and Dobell's can to-day be improved by the addition of a small percentage of peroxid of hydrogen or of thymo-formal or some similar preparation. The addition of one-half of one per cent. of cocain to such cleansing washes does not make a

perfect chemical combination, but the effect of the cocain is obtained and it reduces swelling and sensitiveness so that the wash can more thoroughly perform its work. Its addition is most necessary in the acute coryzas of children accompanying the eruptive fevers; one-half of one per cent. is sufficient. A teaspoon or a soft bulb ear-syringe will sometimes be found more useful than either the atomizer or the nasal douche cup. I have sometimes been in the habit of using a steam inhalation in children who very strongly resisted all attempts to wash the nasal passages. Of course this is most applicable to children in bed suffering from acute disease. The entrance of the steam liquefies the secretions so that

FIG. 3.



Curette for the removal of adenoids.

after a time they dislodge themselves, unless there is great obstruction from inflammatory swelling or chronic enlargement of tissue. Most of the steam inhalers are of the type of the old croup kettle. The Underwood Company furnish an elaborate one; Whitehall & Tatum's evaporizer No. 3 (Fig. 4) is good and the very cheap benzoinol inhaler may answer the purpose. I am in the habit of using some one of the following preparations—tar, carbolic acid, cresoline, eucalyptol, menthol, terrabine, oil of pine needles, etc. This method of inhalation is particularly admirable for the attacks of catarrhal laryngitis which accompany acute coryza, but I have

been in the habit of prescribing it occasionally for cases of chronic nasal catarrh where the secretions are tenacious and abundant.

After the nostrils have been cleansed a non-irritating disinfecting powder or some one of the solutions of oil can be placed in the nostrils with benefit. The powder I employ most is some one of the compound stearates made by McKesson & Robbins and combined with boric acid, aristol, alum, menthol, etc. The protection furnished by such a powder allays irritation and diminishes congestion and secretion. They should not be used where there is atrophic disease, as they are too drying. In this class of cases oils containing a

FIG. 4.



Steam evaporizer for use in cleansing the nasal passages of children.

weak solution of some one of the volatile substances is preferable. I think we obtain by the rapid evaporation of such drugs as thymol and eucalyptol a cooling of the mucous surface which is really an astringent effect without the irritation of any of the old-fashioned irritating astringents. A few drops of spirits of chlorform can be added to this oily solution. We constantly have trouble with our atomizers in spraying oily solutions. I am not at all satisfied with the ordinary oil-atomizer and see no reason why they should not be manufactured on the same plan as those in use for watery solutions, except that they must be coarser. It does not seem to me of value to endeavor to discover more new remedies for the treatment of nasal catarrh in children, but rather to recognize the importance of finding and removing any obstruction which impedes respiration and which constantly produces the acute coryzas and chronic nasal catarrhs. Once the nostrils are free, cleansing and protection will suffice. Nor is it necessary to enumerate a large number of drugs for the treatment of atrophic catarrh in children because the disease as a rule is not far advanced and cleansing

and mild stimulation will usually keep it in abeyance. Empyema of the sinuses tends to rapid recovery as soon as the nostrils are made free, and it is hardly necessary in such a general paper as this to refer to the evident treatment of such cases as syphilitic ulceration and necrosis.

Make the nasal passages sufficiently free for nasal respiration, prescribe the proper unirritating, cleansing solutions, protect inflamed mucous surfaces with soothing powders or oils, and Nature will make strong and successful efforts to restore normal conditions in children.

CLINICAL MEMORANDUM.

A CASE OF ARTERIOSCLEROSIS: NECROPSY.

By HERBERT MAXON KING, M.D.,
OF GRAND RAPIDS, MICH.;
PHYSICIAN TO BUTTERWORTH HOSPITAL.

ON October 15, 1898, there came under my observation the following case which, while presenting nothing particularly new to pathology or symptomatology, is still in some respects sufficiently instructive to make a brief report worth while.

The patient was a man about seventy-one years of age, born in Ireland, who had lived for upward of fifty years in this country. He was a veteran of the Mexican War, had been subjected to almost all conceivable vicissitudes of climatic exposure, had all his life been a hard-working man in the capacity of cook on river steamers, and in military camps, at various times had been in the retail liquor business and, in short, up to the day before he consulted me had always been actively at work, having come to me directly from a military camp where he was employed as cook. He claimed, and I believe truthfully, never to have tasted an alcoholic beverage of any sort, never to have had any venereal disease, nor to have been confined to bed a day by illness.

His family history was very meager; his mother died at the menopause from an unknown cause. His father disappeared during the Civil War and was presumably killed in battle. One brother is living and in good health. He had had another brother and one sister, but knew nothing about them. According to his own statement his illness dated from about two weeks before he consulted me, when he became conscious of rapidly failing strength, great difficulty in the performance of his duties, shortness of breath, occasional dizziness, and muscular weakness (he had previously been a powerful man). During the previous few days he had noticed an increasing distress referable to the region of the heart amounting at times to pain. Upon inquiry I found that during the last few years he had voided urine more frequently than formerly, rising several times during the night for the purpose, but I could not determine that the amount passed in twenty-four hours was increased to any appreciable extent.

Upon examination I found him to weigh upward of 200 pounds, five feet nine inches in height, well propor-

tioned, broad shoulders, thick neck, small round head and, considering his age, of excellent muscular development, but with rather an excess of adipose. The special senses were not impaired. Aside from a sense of anxiety and "nervousness," which increased to a painful degree upon the approach of sleep, his mind and nervous system seemed normal. At all points the lungs gave a resonant percussion-note and were normal to auscultation. The area of heart dulness was slightly increased, but owing to the amount of fat intervening I could not definitely locate the apex-beat except when he stood inclining forward; it was then in the fifth interspace and within the nipple line. Auscultation of the heart revealed the most remarkable feature of the case. The first sound was replaced or obliterated by a loud, distinctly musical murmur occupying the whole systole and ending abruptly with the second sound. At the apex the musical quality of the murmur was most apparent, resembling in fact the ring of a low-pitch tuning-fork. This musical quality gradually changed as the stethoscope approached the point of maximum intensity, *i.e.*, the second right interspace close to the sternum where it was lost in a loud systolic churning sound, but at other points along the great vessels of the neck, subclavian arteries, thoracic aorta and even at the sides of the chest as low as the diaphragm, the musical murmur could be distinctly heard. The spleen, liver, and kidneys were not palpable. The skin was anemic with that peculiar pallor nearly always met with in chronic heart and kidney diseases. There was slight edema of the lower extremities. The tongue was slightly coated but moist. He said that appetite and digestion were normal. The radial pulse was 40, very small, and not easily compressible. Temperature normal. The urine voided at the time of the examination was highly colored and albuminous. The centrifuge sediment contained a few hyalin and granular casts, leucocytes, and some kidney epithelium. The quantity of urine was too small to obtain the specific gravity. Quantitative analysis of the blood resulted as follows: Erythrocytes, 3,350,000 to the c.mm.; leucocytes, 7500; hemoglobin, 60 per cent.; color index, 0.89 per cent.

A provisional diagnosis of aortic stenosis and cardiac hypertrophy with an acute exacerbation supervening upon chronic diffuse parenchymatous nephritis was *allowed* after considerable hesitation, and with, I confess, much doubt. I did not think it probable from my observation that the myocardium was seriously affected, but I was by no means certain that there was not an infectious endocarditis notwithstanding the absence of temperature and leucocytosis.

The patient was kept under as close observation as was possible but allowed to go home and visit me at my office for two days, during which time I was unable to procure a sufficient quantity of urine to make a complete analysis or even to determine the specific gravity. He grew perceptibly weaker, his pulse falling to 36, but temperature still normal, and on the morning of October 17th, he went to the hospital. That night he was very restless and slept at intervals during a few moments, waking suddenly with great anxiety and sense of smothering.

On October 18th his pulse fell to 22 in the forenoon, never rising higher than 28, while his temperature reached 99.2° F. His skin, nails, and lips were frequently cyanotic. I had ordered all his urine saved, and the first twenty-four hours' urinalysis resulted as follows: Quantity in twenty-four hours, 12 ounces; reaction, acid; color, very dark; transparency, clear with considerable sediment; specific gravity, 1025; total solids, 330 grains; chlorids, 16 per cent. bulk; sulphates, 2 per cent.; phosphates, 8 per cent.; urea, 15 grains per ounce, 180 grains in 24 hours; albumin, 5 per cent.; peptones, absent; sugar, absent; bile, absent; indican, negative; diazo reaction, negative. Microscopic examination: Centrifuge sediment — Casts, few granular and hyalin, with an occasional epithelial; blood, absent; pus, present in considerable amount; crystals, urates, few; epithelial cells, from kidney and bladder.

From this urinalysis I was obliged to modify my diagnosis of the kidney lesion, and left it an open question to be decided at the autopsy. On the morning of October 19th the patient had what appeared to the nurse to be a mild uremic convulsion (probably muscular spasm from interference with circulation) and the edema increased slightly. His pulse was 40 all day, temperature normal, cyanosis at times marked. From this time on his condition grew rapidly worse. The urine, however, showed improvement under diuretic treatment. On October 20th, the quantity was 14 ounces; specific gravity, 1025; total solids, 385 grains; urea, 231 grains; albumin, 7 per cent. October 21st, quantity, 21 ounces; specific gravity, 1022; total solids, 508 grains; urea, 388 grains; albumin, 5 per cent.

Periods of mild delirium alternating with periods of consciousness, during which there was extreme anxiety and "nervousness," continued throughout. Of pain, however, the patient never complained, and the only subjective symptom was the "smothering sensation" which he invariably referred to the region of the heart.

On the night of October 23rd the patient was violent, but more from fear and anxiety than from delirium. On the morning of the 24th he seemed unusually calm and was quite rational; pulse was 40, temperature normal. A few minutes after an observation for temperature and pulse, while in the act of rising from the bed with the aid of the orderly, his heart suddenly ceased beating and death was instantaneous.

The autopsy was held four hours later, before rigor mortis had set in. Unfortunately, circumstances made a complete examination impossible and the brain was left unexamined, which, in view of the anatomic diagnosis, would probably have offered points of interest.

Of the thoracic viscera the heart and aorta were of main interest. The walls of the left ventricle were hypertrophied to $1\frac{1}{2}$ times the normal thickness. There had been very perfect compensation in the left heart, as shown by absence of dilatation. The aortic valve was atheromatous, one segment being hard and immobile while smaller atheromatous patches and plates were plentiful about the opening and on the other segments. This accounts for the stenosis, and if the pa-

tient had lived long enough would probably have eventually permitted regurgitation. The right heart, especially the auricle, was much dilated, and the walls very thin, rupturing while the heart was being removed. The aorta was dilated to twice its normal size and had undergone atheromatous degeneration, elasticity having been completely destroyed. The atheromatous plates were large and projected from the surface. At death the ventricles were in diastole and consequently contained clots. The atheroma and dilatation of the aorta and the condition of the valves explain the peculiar musical quality of the murmur. The orifices of the coronary arteries were both patent and permitted the free passage of a probe to a considerable distance. Sclerosis of these arteries was not evident macroscopically. The other valves were apparently normal. There was much fat about the heart but no pericardial adhesions. Aside from a considerable hypostasis the lungs and pleuræ were normal.

Microscopically, sections of the coronaries showed sclerotic changes—a thickening and projection of the intima into the lumen of the vessel with hyalin deposits narrowing the caliber, and a slight increase of connective tissue in the media. While these changes were not as pronounced in the sections as they sometimes are they served to show the nature of the arterial degeneration going on throughout the body.

Of the abdominal viscera, the liver and spleen were not enlarged nor macroscopically imperfect. In short, nothing of practical interest aside from the kidneys was demonstrable. The kidneys were enveloped in much fat, but were neither materially enlarged nor shrunken. The capsules were non-adherent. There was considerable congestion present but no evidence of any chronic inflammatory process unless certain whitish areas which could be seen on gross section could be mistaken for cicatricial tissue, which the microscope proved them not to be. Microscopically, within the area of these patches the parenchyma was shown to have undergone extensive hyalin degeneration. The tubes were here obliterated, as were the glomeruli. Elsewhere in both kidneys there appeared to be a very normal condition of the parenchyma, and the function of the organs was certainly not organically interfered with sufficiently to have caused death or uremia. On the other hand, the arteries and capillaries everywhere showed sclerotic changes and the hyalin deposits which interfere so materially with osmosis and allow the transudation of albumin from the circulation into the urine. Thus the diagnosis of nephritis was, strictly speaking, incorrect.

Chronic interstitial nephritis does impair, and finally destroy the parenchyma of the kidney, although itself merely a local manifestation of a general arteriocapillary fibrosis. In this case, however, the disease as affecting the kidney at the time of death was comparatively insignificant and had nothing whatever to do directly with the cause of death except as the kidney vessels through the common sclerotic changes added their share to the general resistance to circulation and consequent impediment to the heart's action.

It has been demonstrated that the loss of resiliency in

the arteries, such as is induced by sclerotic changes, immensely increases the work of the heart. With the advance of this degeneration, therefore, it becomes only a question of time when the heart must fail and death ensue from simple inability on the part of the heart-muscle to overcome the resistance, and this may occur, as it often does, when post-mortem gross appearances are very misleading and fail to disclose sufficient morbid changes to cause death. In the case presented, "heart failure" was undoubtedly the immediate cause of death, and for the reason stated, notwithstanding the compensation in the left heart.

The anatomical diagnosis, therefore, was arteriosclerosis, under which head is included atheroma and dilatation of the aorta, aortic stenosis, hypertrophy of the left heart, dilatation of the right heart, hyalin degeneration of the kidney, and arteriocapillary fibrosis. The etiologic factors were age, and a life of hard work and exposure. Among the points of interest in the case may be mentioned: First, the misleading significance of the albumin and casts in the urine. Second, the peculiar musical quality of the murmur occasioned by the aortic atheroma; and third, the comparatively sudden and rapid breaking down of an apparently splendid physique as induced by the progressive arteriocapillary degeneration after compensation had failed to meet the requirements. Strictly speaking, of course, this is only an instance of a perfectly natural death, but I am of the opinion that the occasional study of the process of even so common a law of Nature is fraught with instructive interest.

MEDICAL PROGRESS.

Embolio Gangrene of the Hand in the Course of Purulent Pleurisy.—DESBONNETS and BOSQUIER (*Presse Med.*, January 21, 1899) saw a man, aged forty-two years, with effusion in the left pleural cavity. Fetid pus was aspirated from it. The right arm was livid from the fingertips to the elbow and was extremely painful. There was no pulsation in the radial artery. A week later the hand was black with dry gangrene due, as the authors thought, to an embolus from the lung. The pus from the pleural cavity was found to contain no other micro-organisms except tetragenic micrococci.

Delivery of a Child through the Placenta.—BOURLET and MARIAGE (*Jour. des Sciences Med. de Lille*, January 7, 1899) report a case of confinement in which a successful termination was obtained by an unusual procedure. They found a placenta previa and as the condition of the mother was good tampons were introduced and it was decided to await the natural course of events. Later the hemorrhage was so considerable that the placenta was torn through and podalic version was performed. Soon afterward the placenta was delivered spontaneously. The uterus contracted well and there was no cause for alarm on the part of the mother. The child appeared dead. Traction upon its tongue produced no results, but after artificial respiration had been carried out for thirty minutes its color changed and it began to breathe regularly. It

was fifty-five minutes before the child breathed independently of the artificial respiration. An examination of the placenta showed that the child had been delivered right through its center.

Pulmonary Embolus after an Operation for Hernia.—BAYER (*Centr. für Chir.*, February 18, 1899) reported an unusual complication which followed a radical operation for a reducible inguinal hernia. The wound healed by primary union. On the day following the operation the patient had an even temperature of 39° C. (102° F.). On the next day there was expectoration of fresh and clotted blood. In the lower lobe of the right lung, posteriorly, there was an area of dulness and bronchial breathing. These signs lasted for a week and then gradually disappeared. The case was diagnosed as one of pulmonary embolus resulting in hemorrhagic infarction. As the hernia was not adherent the blood-clots must have started from the separation of the veins associated with the cord.

Volvulus of the Sigmoid Three Times Relieved by Operation.—FOOTE (*Bost. Med. and Surg. Jour.*, March 9, 1899) had the unusual experience of operating upon a patient with volvulus of the sigmoid three times within eighteen months. The patient was a young man with a voracious appetite and of constipated habit. The sigmoid was an unusually large and long one, and on each occasion was twisted from right to left. At the last operation the lower portion of the sigmoid was drawn across the abdomen and stitched to the peritoneum and fascia through an incision made just above the anterior superior spine of the ilium. The patient made a good recovery and up to the time of report (two months after the operation) there was no sign of recurrence.

Resection of the Transverse Colon.—SCHWYZER (*The Med. Dial.*, January, 1899) removed the whole transverse colon for carcinoma, uniting the hepatic and splenic flexures by silk sutures. The tumor involved the mesocolon and gastrocolic ligament to such an extent that it was necessary to resect in addition to the structures named a portion of the stomach and a part of the head of the pancreas. The whole omentum was, of course, sacrificed. The patient made a somewhat slow but complete recovery and in two months from the time of operation he had gained seventeen pounds in weight. He was free from pain and his bowels were acting perfectly.

Diabetic Gangrene.—GUSSENBAUER (*Wien. med. Blat.*, February 2, 1899) believes that the gangrene of diabetes is not due to the presence of sugar in the affected tissues but to the ill results which follow infective processes in the diabetic. Infection of the skin in these patients is a common accident. There is usually itching and scratching, and by this means pyogenic organisms obtain entrance. In the healthy such an invasion is followed by a strong reaction on the part of the tissues of the body, but in the diabetic person the blood has lost in large measure its power of resistance, and instead, therefore, of an acute inflammation with necrosis and casting off of the

slough in the skin as is seen in the ordinary boil in the diabetic individual the necrosis takes place slowly and assumes alarming dimensions. If the gangrenous parts are thoroughly removed with the knife and the principles of asepsis and antiseptics are rigidly adhered to, both at the time of operation and afterward, the wound will heal absolutely without reaction even though extensive gangrenous portions have been removed. Gangrene of the lower extremities in diabetics is like gangrene elsewhere in their bodies in that it is nothing but an infective process arising from some break in the continuity of the skin.

THERAPEUTIC NOTES.

Treatment of Carbolic-Acid Poisoning.—HARNSEBERGER (*Charlotte Med. Jour.*, February, 1899) saw a boy, aged sixteen years, within thirty minutes of the time that he had swallowed 1.5 oz. of carbolic acid. He was in a limp and comatose state, the pulse being imperceptible. A pint of cream was at once poured into the stomach which was kneaded in order to mix thoroughly the cream and the carbolic acid. Dry heat and friction were applied to the legs and arms. In two or three hours consciousness returned. The administration of cream and unskimmed milk was continued at short intervals for several hours. The patient entirely recovered in two days. Harnsberger has found that an adult can take 4 drams of pure carbolic acid mixed with cream and glycerin, or with alcohol, without any toxic symptoms developing.

Suture of a Perforated Ulcer of the Duodenum, with Recovery.—TAYLOR (*North Car. Med. Jour.*, February 5, 1899) reports one of the very few instances in which perforated duodenal ulcer has been successfully sutured. The patient was a girl, aged seventeen years, who had at different times complained of indigestion. Perforation occurred about three hours after supper, and operation was performed twelve hours later under the supposition that the appendix was involved. This prolonged the operation, but when the perforation was found it was quickly sutured. Convalescence was retarded by suppuration along the numerous gauze drains but was ultimately complete.

Operative Treatment of Varicose Veins of the Leg.—MARTIN (*Therap. Gaz.*, February 15, 1899) believes that the three methods of operative treatment of varicose veins of the leg at present in vogue all have their proper application. If the varix is of moderate degree and the vein is dilated high up, high division between ligatures performed under cocain is worth trying. If this fails multiple ligation or multiple small excisions are indicated. If the veins are enormously distended and tortuous, and particularly if they contain sacculations and thrombi, total excision is indicated. All of these operations should be followed by two-weeks' rest in bed with the leg placed upon a splint. The patient should wear a carefully applied bandage for at least a month.

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SATURDAY, APRIL 1, 1899.

EXPECTANCY OF LIFE AFTER TRACHEOTOMY. IN AMERICA.

IN our column of "Notable Books," two weeks ago, reviewing Professor Landouzy's "Les Sérotherapies," we laid special stress on that distinguished authority's teaching that practically no children that have been tracheotomized live to be adults. We are glad to learn from letters of Drs. Jacobi and "H.," published this week, that in America clinical experience with tracheotomy has no such ultimately fatal prognosis. Despite all that our much-lamented compatriot O'Dwyer did for laryngeal stenosis by his invention of intubation it is still at times absolutely necessary to perform tracheotomy. It would be discouraging to the surgeon to foresee that this meant inevitably a shortened life to the little sufferers even in the event of present recovery. We would welcome the details of others' experiences with tracheotomy for they will serve the very useful purpose of setting an extremely practical and important subject in its proper light, one, too, in which American ideas have been of special service to medicine and to humanity.

COMPARATIVE LONGEVITY OF DOCTORS.

SOME recent French statistics show that out of every 1000 persons who have reached the biblical term of seventy years there will be found 43 clergymen, 40 farmers, 33 workmen, 32 soldiers, 29 lawyers, 27 professors, teachers, or educators, and only 24 doctors. It has, of course, long been known that the mortality among doctors is much higher than among other professional men and that their expectation of life at any given period is much less. As the collection and collation of statistics grows more exact, however, this difference against the doctor proves to be greater than was at first thought to be the case.

Infectious diseases and pulmonary affections are the two forms of fatal illness that especially add to the mortality among physicians. The statistics emphasize the necessity of care on the part of the physician in the handling of such cases; familiarity with contagious disease begets a contempt for its dangers. Physicians as a rule are notably careless of their own health. The exactest precautions in these matters, far from savoring of cowardice, are the expression of the highest qualities of that natural instinct for self-preservation which must characterize the members of the race who survive as the fittest, if they are to properly fulfil their mission in the struggle for life.

THE INCREASE OF CANCER.

THOSE are startling words that occur in Dr. Roswell Park's article on "A Further Study into the Frequency and Nature of Cancer" in this week's issue. *If the present increase in the death-rate from cancer continues, ten years from now, i.e., in 1909, there will be more deaths in New York from cancer than from consumption, smallpox, and typhoid fever combined.* But that the statement comes from so worthy and conservative a source, one of our best known American surgeons, who is besides recognized as a special authority on cancer and whose investigations on the subject have added so much to our knowledge that was valuable and suggestive, we should be inclined to doubt the possibility of there being any truth in the somber prophecy.

Dr. Park is not, however, alone in his conviction that cancer is rapidly on the increase. The best English and French authorities on the subject are

agreed that the affection is much more prevalent among their respective countrymen and women than it was twenty years ago. Billroth pointed out in the early '90s how rapid was the increase of cancer cases in recent decades in the Vienna General Hospital. Nothnagel in 1897 confirmed this report for later years, and in the volume on "Intestinal Diseases," in his system of "Specielle Pathologie und Therapie," reports a conversation with Billroth just before the great surgeon's death, in which they were agreed that the increase in the frequency of cancer was noticeable, not only among hospital patients and the poorer classes, but also in their private practice and among the wealthy patients. Nothnagel finds that the experience of the last five years has only confirmed this impression.

It is evident then how important a subject the etiology of cancer is becoming. State aid has been asked for its investigation and it is clear that the object is an eminently proper one. A great question of public health, one that is every year becoming more urgent and serious, is involved. If, as Professor Park's investigations and his copious gleanings from medical literature all over the world seem to indicate, the cause of cancer is a parasite, its discovery and the investigation of its biological history would probably confer upon mankind one of the greatest blessings that medical science could bestow. The subject is a most interesting one to medical men, and while no effort should be spared to make the personal observations of every cancer case as complete as possible so that it may be of scientific medical value, every member of the profession should encourage by every means in his power the present earnest effort to make the serious investigation of the etiology of cancer one of the great problems that our Empire State shall solve for her own and the world's benefit.

THE TREATMENT OF SYPHILIS.

WE publish in this number a brief résumé of the discussion on syphilis that occupied the attention of the New York Academy of Medicine at two of its stated meetings and at an additional special meeting during March. It contains some excellent practical and thoroughly up-to-date points on this ever-old yet ever-interesting subject. Some remarks made

by Dr. R. W. Taylor at the first meeting, on the early treatment of syphilis, are worthy of special attention. This well-known syphilographer insists that the popular French method so widely adopted in this country of treating the patient with small doses of insoluble mercurial preparations is often a delusion. After a certain length of time these preparations fail to be completely absorbed in the digestive tract and enough of the precious drug so potent against syphilitic processes fails to be supplied to the organism. Dr. Taylor does not found his ideas, as to the failure of absorption that eventually ensues when this method is continuously employed, on any purely theoretic or empiric grounds. He has been able to demonstrate the truth of his position by finding the drug in considerable quantities in the excreta.

In recent years we have heard more and more of the necessity of lengthening the time that a patient should be under treatment for syphilis. From two to two and one-half years it extended to three and then to four or more, and now syphilographers, especially the French, insist on five or six years of primary treatment with occasional succeeding courses of treatment. More recently there have not been wanting good authorities who say that a syphilitic patient should practically be under medical supervision for the rest of his life, and at least for a number of years should take a course of specific treatment each year.

Far be it from us to discourage the thoroughly careful and solicitous interest in a patient that all this implies. Syphilis is an extremely serious ailment, but under favorable circumstances it is completely curable. The best proof of this is to be found in the fact that there are in medical literature a number of reports of cases of infection a second time showing that the virus of the first attack had been completely eradicated. It is noticeable that most of this insistence on the necessity for long-continued treatment comes from France where the esthetic sense relating to the convenience and comfort of the patient demands the simpler, less troublesome, oral medication. From Germany, where the treatment by inunction is almost universal we do not hear so much of the necessity of almost lifelong treatment.

Dr. Taylor's suggestion that inunctions of mercury will, in the course of prolonged treatment, more efficiently keep the tissues saturated to the

therapeutic degree with mercury than the simpler method by the mouth should be borne in mind. In a recent number of *Volkman's Vorträge* Professor Neisser of Breslau, the discoverer of the gonococcus, and a thoroughly advanced yet conservative investigator of venereal diseases insists that the *schmierkur* (treatment by inunctions) is better than any other method. The recommendation is all the more striking as Neisser considers that now it may no longer be maintained that the mercury is mainly absorbed directly through the skin in this method as was formerly taught. Its presence on the skin leads to its constant vaporization by the body-heat and then it finds its way into the system through the lungs. The patient is kept persistently surrounded by vapor of mercury. Neisser's recommendation that the patient shall keep indoors a good deal and that the *schmierkur* is better given in winter than summer, because of the constant warmth of living-rooms at this season, are interesting and practical suggestions.

PHILADELPHIA PHYSICIANS AND TYPHOID.

We publish this week in our correspondence column, the statistics of the incidence of typhoid fever in Philadelphia during the past thirteen years. Except for the four years 1888 to 1891 there has been a practically constant increase in the number of cases that have occurred in successive years. Notwithstanding this increase there has not been, as is correctly pointed out by Dr. Cleemann of Philadelphia, a corresponding increase in the death-rate per 100,000; on the contrary there has been a notable decrease in the percentage mortality from the disease. Whereas more than 25 per cent. of typhoid-fever cases terminated fatally in 1886, and more than 20 per cent. in the years before 1890, there is now a mortality of scarcely more than 10 per cent. from the disease. This decrease is practically a constant one and reaches a climax in the last year. We do not know of a higher compliment that could be paid to the medical profession of Philadelphia than that contained in the simple statement of these statistics. They speak for themselves and in no uncertain tones.

Few such opportunities for the study of typhoid fever have been given to any set of medical men as those Philadelphia physicians have enjoyed during

recent years and they have been improved. It seems almost invidious to particularize, yet some of the work seems to deserve special mention. The work done at the German Hospital with the bath treatment for typhoid did more to introduce this priceless therapeutic measure to the American medical profession than any other application of this method. Dr. Keen's work on the surgical complications of typhoid is one of the few modern monographs that seems destined to be a classic in medical literature. If we may judge from advance-sheets Dr. Hare's book on the "Medical Complications of Typhoid" soon to be issued will be worthy of a place beside it.

It is clear then that anything that we have said in criticism of the medical profession of Philadelphia has not been meant to apply to them as physicians but as citizens of a great city, the custody of whose public health must be their special care and charge. Surely if the profession had as a unit done its civic duty during all these years and aroused the public conscience as it was obligated to do, the present awful condition of things with regard to typhoid would not obtain. Unfortunately the immersion in the duties of an exacting profession often keeps medical men from taking that interest in public affairs that they should. This cannot, however, be accepted as an excuse when there is a serious question of public health at issue.

Philadelphia must have improvements in her water supply. What they shall be is a subject for experts, who know the conditions, to decide but they should come without further delay. It was thought a few years ago that the new reservoirs which had been constructed would allow of the subsidence of floating particles during the storage of the water and so free it from infective material. This hope has been found illusory. We understand that the consumption of water is now so great that very little if any time is allowed for subsidence in the storage-reservoirs and that even with continuous pumping the water department is barely able to supply sufficient water to Philadelphia's increased population. It is evident then that the present state of affairs will continue from bad to worse unless something effective is done. It must be done at once. There can be no sufficient excuse for delay. Palliation is impossible, the attempt at it is criminal in

the face of the statistics: for the present year up to March 25th the deaths from typhoid 463; during the last week 563 cases and 38 deaths. Precedent and procedure and politics and red tape and bribery and chicanery must all hide their diminished heads before this horrible slaughter of Philadelphia's citizens.

ECHOES AND NEWS.

Dr. A. Martin Leaves Berlin.—On April 1st Dr. A. Martin removes to Greifswald, to take the chair of gynecology at the Greifswald University.

Influenza in Paris.—During the week ending March 23d, there were 238 deaths above the average. Grip is held responsible for the increased death-rate.

Appointment by Governor Roosevelt.—On March 22d Governor Roosevelt appointed Professor Walter Francis Wilcox of Ithaca, N. Y., a member of the State Board of Health. The appointee is Associate Professor of Social Science and Statistics in Cornell University.

Gold Medal for Professor Dewar.—The first gold medal ever given by the Smithsonian Institute at Washington, D. C., is the Hodgkins' medal which was on March 20th sent to Professor James Dewar, F.R.S., of London, in recognition of his discovery of the process by which air may be liquefied.

Dr. Senn on the Army Beef.—Dr. Nicholas Senn testified before the Beef Inquiry Board at Chicago, Ill., on March 21st to the effect that the beef and bacon served to the troops in Cuba had a bad effect on their health, that the beef was not roasted, but simply boiled and cooked too much and that it was not adapted to a daily ration, was tasteless and lacked nutritious qualities.

Guarding against Yellow Fever.—The Surgeon-General of the Marine Hospital Service on March 20th detailed assistant surgeons to the various fruit ports of Central America. The surgeons detailed carry with them instructions concerning the investigation of possible yellow fever on out going vessels. All vessels receiving certificates from the surgeons will be allowed to land their cargoes in the United States without being delayed by preliminary disinfection.

The Medico-Chi Can Grant Degrees in Dental Surgery.—The Medico-Chirurgical College of Philadelphia petitioned the courts for leave to amend its charter so as to grant diplomas and degrees in dental surgery. This was resisted by the Philadelphia Dental College on the ground of want of authority to do so. The Common Pleas Court decided in favor of the Medico-Chirurgical and the Dental College appealed from the decision. The Supreme Court in an opinion by Justice Dean, has just confirmed the decision of the lower court, and dismissed the appeal.

Lord Lister Honored.—Lord Lister has been elected Foreign Associate of the Paris Academie de Medicine.

"The honor," says the *British Medical Journal*, "is the highest which it is in the power of the medical profession of France to bestow. It must be all the more gratifying to the distinguished man on whom it has been conferred from the fact that the vote for him was unanimous. Professor Koch of Berlin was elected at the same time, but in his case several of the members of the Academie de Medicine abstained from recording their votes."

Professor Koch Going to South Africa Again.—Professor Koch is said to be fitting up an expedition to go to South Africa, especially to German East Africa. His intention is to study malaria and kindred diseases more fully, especially with an eye to prophylaxis, immunization, and treatment. With malaria under control Professor Koch insists that the tropics would be perfectly habitable for Europeans and Caucasians generally. He aims also to investigate more fully and locate the exact limits of the plague focus that he found on the shores of Lake Victoria Nyanza during his previous visit to Africa.

The "Medical Record" Plays with Fire.—We are not a little amused at the New York *Medical Record* for its complimentary reference in its last issue to its "classical contemporary." Would it not be well for our distinguished neighbor, when criticizing others on so delicate a subject, to take care of its own fences in the matter of the proof-reading of Latin quotations? The quotation "*ad majoram (sic) scientiæ gloriam*" is not quite the form in which the "classical contemporary" used it. We would humbly suggest to the *Record's* appreciative Latinist that the phrase *bene facta male locata male facta* would more satisfactorily express the sense which it was intended to convey if it had read *bene facta male locuta male facta*. *Non ne?*

State Appropriations for Hospitals.—On March 21st it was reported from Albany that the annual appropriation bill, which has passed the Assembly, has been materially changed in form by the Senate Finance Committee. Heretofore no appropriations have been included in this bill for the maintenance of the State hospitals, and money for this purpose has been levied by special tax. It has been decided by the Senate Committee to place appropriations for hospitals in the annual appropriation bill, and provision for \$5,000,000 for the care of the insane has been inserted in this bill. There is also another change. Hereafter it must be designated just what amount of the appropriation given to each institution shall be expended for salaries, maintenance and expenses; this has not heretofore been done.

School of Public Health.—The Council of New York University has set apart buildings near First Avenue, between Twenty-fifth and Twenty-sixth streets, for the use of a "School of Public Health." There is a bill in the Legislature at Albany to provide \$25,000 for the maintenance of the school for the year beginning October 1, 1899. It is proposed to promote public sanitation in various ways, especially to instruct properly accredited medical and lay sanitary officers throughout the State in methods and appliances for the prevention of disease.

The public will be instructed in sanitary matters by university extension work. It is expected that a hygienic museum will be established for the collection and exhibition of all forms of sanitary appliances and models in plumbing, ventilation, disinfection, heating, clothing, and other kindred subjects to be open to the public.

The Chlorin Treatment of Diphtheria.—The chlorin treatment of diphtheria has been submitted to a test experiment at the Willard Parker Hospital, New York City, during the past six weeks. Every alternate patient ill with diphtheria received the chlorin treatment, and every alternate one the antitoxin treatment. In connection with the chlorin treatment tonics and general sustaining remedies were used. Dr. Winters supervised the chlorin treatment, and Dr. Berg the antitoxin. The mortality was higher, and the patients generally seemed to be decidedly worse with the chlorin treatment than those with the antitoxin. It is the opinion of those who witnessed the results that the chlorin solution seemed harmless, but useless. It produced neither good nor bad results. The course of the disease presented the picture so familiar previous to the discovery of antitoxin.

A Case of Typhus in Massachusetts.—A Russian immigrant who landed at the port of New York about fourteen days before his symptoms appeared is reported to be lying ill of typhus at Chelsea, Massachusetts. There is no question but that the disease is epidemic in many parts of Southern Russia, the famine that has threatened the country for some months having made numbers of the people especially irresistible and liable to contract what has been under similar circumstances often called famine fever, but which is really the dread typhus. An incubation period of more than three weeks is unusual for the disease but is not unheard of. It is clear then that great caution is needed in permitting immigrants from these Russian districts to land at any of our ports and that the longest possible incubation period of the disease be allowed to elapse before they are permitted the liberty of the country. While typhus has only very exceptionally been known to rage as an epidemic among a cleanly, well-fed folk experiments in this line are eminently dangerous.

First Aid to the Injured on Railways.—We called attention some months ago to the fact that in other countries, notably France and England, railroad men were being trained in the proper giving of first aid to the injured in railway accidents, and that properly prepared and packed surgical materials were readily and quickly available for the emergencies of railroad traffic. We are pleased to note that now the importance of the system as we presented it has appealed practically to at least one corporation. It is announced that the managers of the Chicago, Milwaukee and St. Paul Railroad (we welcome the opportunity to give them due credit for their truly humanitarian action) are about to start a systematic course of instruction in the principles that underlie the giving of medical and surgical first aid to the injured. We hope

that other American railroads will recognize that it is a duty they owe the traveling public to see that in case of accident, the injured shall receive prompt, well-directed, trained assistance and not the ignorant, meddlesome interference now so common.

The Operation on the Pope.—There has been a good deal of indefiniteness in the statements in the daily press as to the exact nature of the cystic tumor for which an operation was recently performed on Pope Leo. The Roman correspondent of the *British Medical Journal* gives the following details: For upward of twenty-five years the Pope had had a cystic tumor in the left flank immediately above the crest of the ilium. It was hematic in character and the size of a large lemon (correspondent says citron, but this is evidently a mistake) or fetal head. It had never given any trouble until recently when considerable pain developed in it, and toward the end of February the Pope was taken ill with malaise and rise of temperature. His physician, Dr. Lapponi, decided that he was suffering from inflammation of the cyst and called Professor Mazzoni in consultation, who enucleated the cyst March 1st. The operation was done under local anesthesia as it was not thought advisable to administer chloroform to one of the Pope's age (he completed his eighty-ninth year the day after the operation, March 2d). The Pope bore the operation very well, but it was deemed inadvisable to stitch the edges of the wound because of the pain it involved so they were brought together with plaster. His temperature fell after the operation, and the wound healed slowly but satisfactorily.

American Medical Association.—The officers of the sections at the Columbus meeting will be as follows: *Practice of Medicine*.—Frank Billings, Chicago, chairman; Carroll E. Edson, Denver, secretary. *Surgery and Anatomy*.—W. J. Mayo, Rochester, Minn., chairman; M. L. Harris, Chicago, secretary. *Obstetrics and Diseases of Women*.—A. H. Cordier, Kansas City, Mo., chairman; W. D. Haggard, Jr., Nashville, Tenn., secretary. *Materia Medica, Pharmacy and Therapeutics*.—Thomas H. Stucky, Louisville, Ky., chairman; Leon L. Solomon, Louisville, Ky., secretary. *Ophthalmology*.—Casey A. Wood, Chicago, chairman; Charles H. Williams, Boston, secretary. *Laryngology and Otology*.—Emil Mayer, New York, chairman; Christian R. Holmes, Cincinnati, secretary. *Diseases of Children*.—Henry E. Tuley, Louisville, Ky., chairman; L. D. Boogher, St. Louis, secretary. *Physiology and Dietetics*.—J. Weir, Jr., Owensboro, Ky., chairman; Lee Kahn, Leadville, Col., secretary. *Neurology and Medical Jurisprudence*.—Frederick Peterson, New York, chairman; Hugh T. Patrick, Chicago, secretary. *Cutaneous Medicine and Surgery*.—W. T. Corlett, Cleveland, Ohio, chairman; J. M. Blaine, Denver, Col., secretary. *State Medicine*.—Arthur R. Reynolds, Chicago, chairman; W. P. Munn, Denver, Col., secretary. *Stomatology*.—George V. I. Brown, Milwaukee, Wis., chairman; Eugene S. Talbot, Chicago, secretary.

The "Cure for Pneumonia."—The newspapers reported

some three weeks ago that a cure for pneumonia had been discovered by Professor Wasserman working in Professor Koch's Laboratory in Berlin. The item proves to be the usual newspaper canard with perhaps a shade more of foundation than there is ordinarily in newspaper accounts of supposed new discoveries in medicine. What Dr. Wasserman did publish was an account of some researches on immunity with regard to the pneumococcus which he has been conducting for some time. We gather from the *Deutsche Medicinische Wochenschrift* of March 2d, in which his article appeared, that his aim was to find the comparative immunizing value of the blood-serum and of extracts obtained from the different organs and the bone-marrow of immunized rabbits. He concludes that the organs contain no productive substances while the bone-marrow is rich in it, holding more even than is contained in the blood-serum. The protective substances are formed, therefore, in the bone-marrow whence they pass into the blood to be mainly carried in solution in the serum. Dr. Wasserman lays no claim to have made any discovery which can be utilized in the treatment of pneumonia in human beings. His paper is, like preceding papers of his that concerned themselves with the immunizing substances produced in tetanus, a distinct contribution to the general subject of immunity, but much more work will have to be done in this line before his discoveries can be utilized practically in therapeutics. Dr. Wasserman himself would, we are sure, from what we know of the thoroughly scientific character of his work have been the last to produce the impression the newspapers have given the results of his recent investigations.

William W. Van Arsedale, M.D.—At a special meeting of the Medical Board of Mt. Sinai Hospital, held March 18, 1899, the following resolutions were adopted:

The Medical Board of Mt. Sinai Hospital has learned with sorrow of the death of Dr. William W. Van Arsedale which occurred at Atlantic City on March 17, 1899. Dr. Van Arsedale had endeared himself to all the members of the medical staff by the lovable traits of his character and earned their respect by his eminent professional attainments and efficiency.

Resolved, That in the death of Dr. Van Arsedale the Medical Board has lost one of its most valuable and respected members, the institution a skilful surgeon and able scientific worker; that the sympathy of the members of the Medical Board be extended to his family in their sad loss; and finally, that these resolutions be spread on the minutes and published in the *MEDICAL NEWS*, *Medical Record*, and *New York Medical Journal*.

Resolved, That a copy of these minutes be sent to his family. (Signed.) Arpad G. Gerster, M.D., William F. Fluhrer, M.D., Committee.

Sixth International Otological Congress, 1899.—This congress is to be held in London, August 8th to 12th, under the Presidency of Dr. Urban Pritchard. The British Organization Committee, which numbers over 70 members from Great Britain and the Colonies, has Mr. A. E. Cumberbatch for its treasurer, and Mr. Cress-

well Baber for its Secretary-General. The meeting will be held at the examination hall of the Royal College of Physicians of London, and Royal College of Surgeons of England, and the following details have been arranged: On Monday evening, August 7th, a preliminary reception will be held by the president elect. On August 8th, 9th, 10th, and 11th, the congress will be in session, and will be followed on Saturday, August 12th, by an excursion for members and their friends. The official languages of the congress are English, French, German, and Italian. The subscription, to include a copy of the transactions, is fixed at £1, to be paid to the treasurer, Mr. A. E. Cumberbatch, 80 Port and Place, London, W., before the opening of the congress. The subject chosen for special discussion is "Indications for Opening the Mastoid in Chronic Suppurative Otitis Media," which will be introduced by Professor W. MacEwen of Glasgow, Dr. H. Knapp of New York, Dr. Luc of Paris, and Professor Politzer of Vienna. A museum of specimens and instruments relating to otology, shown by members, will be a feature of the meeting. Communications regarding the museum should be addressed to Mr. A. H. Cheate, 117 Harley Street, London, W. Intending members of the congress are requested to send their names to the Honorable Secretary-General as soon as possible, and in any case *not later than May 1st*. Titles of communications, together with a short abstract of the same, to be sent to the Honorable Secretary-General by the same date. According to the regulations of the congress, no papers shall exceed fifteen minutes in reading, therefore all long communications should be read in abstract.

Protests to the Legislature.—Protests against restricting the work of the New York Health Department in the production and sale of antitoxin have been recently made as follows: To the Committee on Cities of the Assembly and Senate of the State of New York.

WHEREAS, the Department of Health of New York City during the last few years has established a high standard of work in the prevention and treatment of infectious diseases, especially diphtheria, with the resulting reduction in mortality of zymotic diseases from thirteen per thousand to five and a fraction, and the reduction in the deaths from diphtheria and croup from 2870 in 1894 to 922 in 1898, and

WHEREAS, the scientific investigation carried on in the laboratories of the Department of Health have been of great value to the medical profession and to the people, not only of this city but of the whole country, and

WHEREAS, the products of these laboratories have been regarded by the medical profession of this city of very high standard, and

WHEREAS, Assembly Bill No. 451 if enacted would materially restrict and limit the work of the Department, and

WHEREAS, it is not in our opinion in the interest of the public good and should not become a law,

THEREFORE, we, the members of the Medical Board of New York Hospital, respectfully protest against the

passage of this Act, as inexpedient, harmful, and opposed to the interests of the people of the City of New York. (Signed) George L. Peabody, M.D.; A. Brayton Ball, M.D.; F. W. Murray, M.D.; W. H. Draper, M.D.; R. F. Weir, M.D.; Samuel W. Lambert, M.D.; Louis A. Stimson, M.D.; William T. Bull, M.D.

MARCH 11, 1899.

The undersigned members of the Medical Board of Roosevelt Hospital desire to enter a protest against the passage of Assembly Bill No. 451 as a measure which would restrict and limit the admirable work of the bacteriological laboratories of the Department of Health of New York City and as a measure which is not in the interest of the people of New York City. (Signed) George L. Peabody, M.D.; George H. Tuttle, M.D.; Charles McBurney, M.D.; Francis Delafield, M.D.; W. H. Draper, M.D.; Robert F. Weir, M.D.; Wm. H. Thomson, M.D.

MARCH 11, 1899.

CORRESPONDENCE.

A DENIAL THAT TUBERCULOSIS FOLLOWS TRACHEOTOMY, AS CLAIMED BY LANDOUZY.

To the Editor of the MEDICAL NEWS.

DEAR SIR:—In a review of Professor Landouzy's "Clinical Lessons in Serum-therapy," which recently appeared in the MEDICAL NEWS the question of the expectation of life after tracheotomy is discussed, and the statement made that tuberculosis nearly always carries off tracheotomized patients within a comparatively few years after the operation. To quote further, "He now repeats the conclusion, and in the light of his riper experience and continued observation on the subject, it must carry great weight. Simon, of Paris, who has passed his life among children, does not know of a single living adult who had been tracheotomized as a child."

Such statements cannot go unchallenged, at least in New York. The undersigned is acquainted with a medical man who has been in active practice for the past fifteen years, and who, when but a few years old, had a rapid tracheotomy done upon himself with a penknife by the attending physician. He is in excellent health, and does not present any evidence of tuberculosis.

A miss of eighteen presented herself but a few months ago, and was introduced as a patient upon whom the writer had performed tracheotomy about fourteen years ago. The adopted mother with considerable pride stated that the young lady had an excellent voice and sang in a choir.

Third instance: rapid tracheotomy by Dr. D., fifteen years ago; tardy recovery because of infection of wound; the young lady was in excellent health when last heard from, about half a year ago.

In view of the reputation of the authors referred to, and the weight which their statements carry, the above experience may be of interest and worthy of a brief notice.

H.

309 EAST 17TH STREET, NEW YORK,
March 20, 1899.

THE LONGEVITY OF TRACHEOTOMIZED CHILDREN.

To the Editor of the MEDICAL NEWS.

DEAR SIR:—As you characterize on page 340 of your issue of March 18th, Landouzy's book on "Serum Therapy" as one of "unusual interest," there is a possibility that unsophisticated readers may take his statements, many or all, as absolutely correct. At all events, it may be difficult to distinguish between those which may be taken for granted, and such as permit of modifications.

The distinguished author expresses the opinion that "in practically all cases tuberculosis carries off tracheotomized patients within a comparatively few years after the operation," and Simon is quoted as not knowing "of a single adult who had been tracheotomized as a child" (MEDICAL NEWS, p. 342). It is not for me to look for an explanation of the singular experience of the two famous teachers. My own, however, differs from theirs. A young man whom I tracheotomized in 1861 turned up suddenly, having for many years lived in Texas, with an extensive necrosis of the humerus some fifteen years ago, and was operated upon by Dr. F. Lange. After his recovery he returned to his State. Some four years ago I met quite accidentally a man whom Dr. Ernst Kraikowizer had operated upon forty years previously. During the last two years two gentlemen came up to me—one on a railroad train, the other in the residence of a patient—to show their cicatrices and renew an acquaintance interrupted some thirty-five years. I admit I saw nothing surprising in their being alive, nor can I see the reason why a child with laryngeal diphtheria should not share the average opportunities, after recovery.

A. JACOBI, M.D.

110 WEST 34TH STREET, NEW YORK,
March 21, 1899.

NOT A CASE OF HYDROPHOBIA.

To the Editor of the MEDICAL NEWS.

DEAR SIR:—In the edition of the MEDICAL NEWS, dated March 18th, there appeared the report of a case under the heading: "An Interesting Case of Hydrophobia; Recovery."

It seems to me that this title is rather confusing as all undoubted cases of hydrophobia have been fatal. To prove that a case was one of hydrophobia we must either find by tests that the offending animal which bit the patient was mad, or by making tests from the brain or spinal cord of the victim prove him to have died from rabies. These tests are made by inoculating other animals, and are the only sure means of proving the absence or presence of rabies. If we cannot do this we must at least prove that the person has been bitten within six months, and by the symptoms of the disease demonstrate that the case was probably hydrophobia. If the patient dies we may presume it to have been a case of hydrophobia, but without more proof we could not report it as an undoubted case of the disease. If the patient should live it seems to me we should have to assume the position taken after the recovery of a case of supposed tuber-

cular meningitis, that is, that there was a mistake in the diagnosis.

In the case reported as hydrophobia the history of the bite is obscure and occurred at least a year or two before the disease developed. No authentic case reported of man or animal has had an incubation period of more than six months. Then there was no history of the offending dog. The history of the case is not like one of true hydrophobia, as people do not in that disease have to be held down, make no attempt to bite, and have no fear of water.

I should say that the case was one simulating hydrophobia, or of hystero-epilepsy.

Yours truly,
FOLLEN CABOT, M.D.

New York, March 24, 1899.

TYPHOID IN PHILADELPHIA.

To the Editor of the MEDICAL NEWS.

DEAR SIR:—In your remarks upon my letter of the 12th inst. you did not reply to my challenge to furnish facts or statistics to prove your assertions with regard to the typhoid mortality in Philadelphia that "matters have grown worse not better in the last fifteen years," and "the last year is the worst of the ten." Instead, you refer me to the Philadelphia health reports to give the impression, I presume, that these reports confirm your careless utterances.

This is what I find, bringing the statistics down to the end of "the last year," 1898. (Annual report Board of Health of Philadelphia for 1897, page 70.):

Years.	Deaths.	Ratio per 100,000 Inhabitants.	Ratio for 5 years.
1884	662	71.3	....
1885	610	64.2	....
1886	618	63.6	....
1887	621	62.4	....
1888	785	77.2	65.7
1889	730	70.7	....
1890	666	63.6	....
1891	683	64.0	....
1892	440	40.2	55.8
1893	456	40.8	....
1894	370	32.4	....
1895	469	40.2	....
1896	402	33.8	....
1897	401	33.0	....
1898	566*	44.6	36.5

These figures show that up to the end of last year the typhoid mortality of Philadelphia in the previous fifteen years quite steadily, and in an increasing ratio, decreased from 65.7 in the first period to 55.8 in the second, and to 36.5 in the last. This contradicts your first assertion. It is also demonstrated that there were three years in the last ten "worse" in their mortality than last year, namely, the earlier years, 1889, 1890, and 1891, the numbers 736, 666, and 683 being respectively greater than 566. This contradicts the second assertion.

RICHARD A. CLEEMANN, M.D.

PHILADELPHIA, March 20, 1899.

* The report of the Board of Health of Philadelphia for 1898 not having yet been published, the figures for that year were obtained from the Registration Office. The whole number of deaths reported from typhoid fever during 1898 was 639, but 73 of these were of soldiers in the hospitals who had been brought from distant camps, and are to be subtracted to arrive at the true number of deaths to be credited to Philadelphia.

[When we received the above we asked our correspondent to send us statistics giving the total number of cases of typhoid fever that had been reported in Philadelphia for each of the last fifteen years. He did so for the last thirteen years, the others not being available, but asked that these statistics be not incorporated in his letter. We give them below. We think they make perfectly clear what is the basis for our statements that the condition of Philadelphia with regard to typhoid has *grown worse, not better, in this last fifteen years, and that the last of the years is the worst of them all.* After all, it is the number of cases of typhoid that occur, not the deaths from the disease, which shows the infective quality of Philadelphia's water and the need for reform. One awful year, 1889, approached last year in the number of cases reported, and the years just before and after it are notably above the average, but otherwise there is shown to be a steady progressive rise in the number of typhoid cases. This increased incidence of the disease is much more than proportionate to the increase in population during the same period. The decrease in the death-rate per 100,000 during these fifteen years, as given by Dr. Cleemann, only shows that Philadelphia physicians have known how to take advantage of their wonderful opportunities (the best that have been vouchsafed to any set of medical men anywhere in recent years) to make great practical advances in the treatment of the disease, and so lessen the mortality.—ED.]

Years.	Cases.	Years.	Cases.
1886	2079	1893	2519
1887	2488	1894	2357
1888	3573	1895	2748
1889	4631	1896	2490
1890	3182	1897	2994
1891	3531	1898	4749
1892	2304		

STEAM STERILIZATION.

To the Editor of the MEDICAL NEWS.

DEAR SIR:—The valuable article on sterilization written by Dr. Theodore Dunham which appeared in the MEDICAL NEWS of March 4, 1899, has been of much interest to surgeons, and has aroused the question in the minds of some of us if the sterilizers in general use in our hospitals are entirely satisfactory. I think in regard to most of these sterilizers that the question can be answered in the affirmative.

A series of experiments made some six or seven years ago when pressure steam sterilizers were first introduced into the Presbyterian Hospital, showed the same results as those obtained by Dr. Dunham when sterilizers of a cylindrical form were employed. It was found that when the sterilizer was in the shape of a cube the results were different, and numerous tests made at that time proved to us that even when the steam was introduced at the bottom the registering thermometers placed at the bottom, in the center, and at the top, at the expiration of ten minutes, showed practically the same degree of heat. Since the publication of Dr. Dunham's paper it was thought that perhaps these observations were not correct, and in consequence I have recently made the following tests of the steam sterilizers which we now use in the

Operating Pavilion of the Presbyterian Hospital. These tests were repeated on three occasions and the results were identical:

(a) A registering thermometer was placed on the floor, another on a shelf in the center, and another at the roof of the sterilizer. At the expiration of ten minutes after the gas-stove was lighted each thermometer registered 240° F. (b) The thermometers were arranged as before, but the sterilizer was filled with dressings, the center thermometer being tightly rolled in a bundle of gauze and placed in the metal box. At the expiration of ten minutes the upper and lower thermometers registered 240° F., and the one enclosed in gauze registered 238° F. (c) The thermometers were placed as in b. At the end of twenty minutes each thermometer registered 245° F.

For some years I have been using in my office a sterilizer of German make in which the steam, as Dr. Dunham suggests, enters at the top of a cylinder and emerges through a tube at the bottom into a vessel filled with cold water. The temperature does not reach as high a point as that in the hospital sterilizers of American manufacture but the heat is uniform throughout. Some experiments which have been made for me by exhausting the air by means of an air-pump, before turning the steam into the sterilizer, have convinced us that there is no special advantage in any such contrivance.

Dr. Dunham has wisely chosen a subject which I feel sure is of great interest to surgeons, and many of us feel indebted to him for his investigation in this special line of work, which is of such vital importance to all operators.

Yours very truly,

ANDREW J. MCCOSH.

NEW YORK, March 24, 1899.

THE BERLIN TUBERCULOSIS CONGRESS.¹

To the Editor of the MEDICAL NEWS.

DEAR SIR:—The "German Central-Committee for the Erection of Sanitaria for Consumptives" has issued a call for a Congress to be held in Berlin, Germany, May 24 to 27, 1899, for the purpose of discussing the subject of tuberculosis. The Congress will meet in the new building of the Imperial Diet, and is under the patronage of Her Majesty, the Kaiserin, while Prince Hohenlohe, the Imperial Chancellor, will serve as Honorary President. All of the German States, also local authorities, medical faculties and societies, and all corporations interested in fighting tuberculosis have been requested to send delegates; all foreign countries represented at the Imperial Court have also been invited to take part. The United States Embassy has been requested to extend a cordial invitation to American physicians to become members of the Congress, and the same invitation has been extended through other missions to physicians of other nationalities.

As basis for discussion papers will be presented as follows: (1) "Distribution and Extent of Tuberculosis,"

¹ Written at the request of Dr. Pannwitz, General-Secretary of the Congress, and forwarded simultaneously to several American journals. The medical, veterinarian, and scientific press is requested to call the attention of its readers to this Congress.

by Geheimrath Koehler, Director of the Imperial Health Office, and Geheimrath Krieger of Strassburg; (2) "Etiology," by Professors Robert Koch and B. Fraenkel of Berlin; (3) "Prophylaxis," by Professor Gerhardt and Generaloberarzt Schjerning of Berlin; (4) "Therapy," by Professors von Ziemssen of Munich, and Schroetter of Vienna; (5) "Sanitaria," by Herr Gaebel, President of the Imperial Insurance Office, Berlin, and Dr. Dettweiler of Falkenstein.

Following the presentation of the two leading papers (limited to twenty minutes each) in the respective divisions, there will be a general discussion, speakers being limited to ten minutes each. All papers and remarks are to be in German, although the chairman is empowered to make exceptions during the general discussion.

All persons interested in this subject of tuberculosis are eligible for membership; membership cards (20 marks—nearly \$5) are to be obtained at the office of the Congress (Bureau des Organisations-Komites, Wilhelm Platz 2, Berlin, W.) and entitle the holder to a copy of the "proceedings." An early registration is requested.

The writer has been requested to furnish a list of Americans to whom special invitations to the Congress should be sent. He has complied with this request, so far as his personal and professional acquaintance with specialists in this line has permitted, and has also suggested to the committee that invitations be sent to the various medical societies and faculties. There are undoubtedly many American practitioners especially interested in tuberculosis, and possibly some laboratory workers, whom he has overlooked. Should any such person desire to attend the Congress, yet prefer to receive a personal invitation, the writer will be pleased to forward the name of such person upon proper introduction to the Executive Committee of the Congress. As "proper introduction" will be considered a letter from any recognized medical, scientific, or veterinary faculty, or society.

CH. WARDELL STILES, PH. D.,

Scientific Attaché, U. S. Embassy.

BERLIN, GERMANY.

OUR PHILADELPHIA LETTER.

[From Our Special Correspondent.]

THE BILL FOR AN APPROPRIATION FOR PURE WATER DEFEATED—THE RELATION OF THE BILE TO INFECTIOUS DISEASES—SURGERY OF THE BILIARY PASSAGES AND GALL-BLADDER—THE RED-CROSS SOCIETY IN CUBA—SALARY POSITIONS IN THE BUREAU OF HEALTH AND THE NEW MAYOR'S POWER—A NEW CORONER AND A NEW CORONER'S PHYSICIAN—OBITUARY—HEALTH STATISTICS.

PHILADELPHIA, March 27, 1899.

SELECT Council on Friday last defeated the bill to appropriate \$3,200,000 from the \$11,200,000 loan for the improvement, extension, and filtration of the water-supply, notwithstanding the presence of a delegation of twenty-five or thirty members of the Citizens' Emergency Committee on Water and resolutions and communications from every important commercial, educational, and scientific association in the city. It is the opinion of those in a position to know that the beginning of any measures

looking to the relief and improvement of the water-supply has, by this action of councils, been put off for many months. Of the thirteen councilmen who voted against the measure nine are known to favor the infamous Schuylkill Water Bill, whereby the city's rights were to be bartered away, and a set of men more inimical to the city's welfare would be hard to find. The work of securing pure water must now be begun all over again involving weeks or months of delay and each week means 400 or 500 preventable cases of typhoid, each week exceeding the preceding. Over 500 deaths have occurred since January 1st and this week's number of cases exceeds any number so far recorded, but when will the limit be reached? What will the spring and summer bring forth? If an average cost of caring for one patient is placed at \$200, surely a low average, and 400 cases occur each week, it means that every month of this year has so far cost the population of Philadelphia about \$320,000, or for January, February, and March about \$1,000,000 in round numbers. And yet Select Council (save the mark) refused to spend \$3,000,000 which the city, by popular vote, demanded last year. Your correspondent honestly believes that serious trouble with the populace will eventually compel the politicians to come to terms and the day of rioting and uprising seems not far off if we are to place any credence in the press.

Dr. A. C. Abbott, City Bacteriologist, at a joint meeting of the Pathological Society and the Academy of Surgery, held March 23d, read a paper on "The Relation of the Bile to Infectious Diseases." He said that at the outside the bile has no germicidal action and is of doubtful antiseptic value. It is antitoxic, protecting against the disease from which the animal it is taken from is suffering. Sometimes organisms persist in the bile, however, when they no longer exist in any other organ. One function of the bile, that of preventing putrefaction, is accomplished, according to Dr. Abbott, more by the stimulation of peristalsis which hastens elimination before putrefactive changes occur than by any direct antiputrefactive action. It does not prevent the growth of bacteria and itself quickly undergoes decomposition. Frazer has shown that it can neutralize venoms and that inoculations of bile are preventive against them. Koch found that bile from animals suffering with rinderpest (?) when injected into other animals prevents the disease. Two explanations are given of the way in which this is accomplished: First, by attenuation of the micro-organisms, and secondly, Koler's explanation that no attenuation occurs but immunity is due to the growth of these specific organisms at the point of inoculation and by their growth the bile causes a tissue-wall to be built around them through which they cannot escape. Dr. Abbott thinks much is to be learned by different means of studying the bile, treating it as a living substance instead of a dead, just as a study of "dead" blood would fail to reveal the true character of living blood.

"Surgery of the Biliary Passages" was the title of an article by Dr. John B. Deaver in which he divided into classes the many pathological conditions found in the gall-bladder and its ducts. He presented statistics from

40 cases of his own, 10 of which were in males and 30 in females. Of the 40 cases 14 were due to cholelithiasis, the most common affection. Of the 40 there were 34 recoveries, 5 dying from shock and 1 from hemorrhage. An interesting statement by Dr. Deaver was that 50 per cent. of women with "corset" livers have gall-stones. Out of 100 post-mortems held at the German Hospital 6 subjects were found incidentally to have gall-stones. Dr. Deaver outlined his method of operation, one feature being his belief that an incision through the rectus muscle leaves less chance of a subsequent hernia and another, his infallible rule to leave a temporary fistula.

Dr. Joseph McFarland in the discussion said that post-mortems in general show gall-stones to be present in about seven per cent. of all cases. He said the largest number of gall-stones ever found was 7802 and the largest single stone was 6 inches long by 2 1/4 inches in diameter.

Dr. W. M. L. Coplin and Dr. Mears discussed the question. In answer to a question concerning the supposed agglutinative action of bile after typhoid infection Dr. Abbott said he had not studied it. No mention was made of the interesting communication of Cushing last spring in which he discussed this agglutinative reaction and its possible relation to the formation of gall-stones by the clumping forming nuclei for their production and one case which he reported where typhoid bacilli were found in the gall-bladder though there was no history of typhoid fever.

The Philadelphia Red-Cross Society has been asked to forward three ambulances, one wagon, and a pair of mules for work in Cuba. The work which was interrupted by the war to a certain extent is to be vigorously pushed and a Red-Cross Hospital will be established in Havana it is hoped.

When Mayor-elect Ashbridge resigns the office of coroner, on March 31st, Deputy-Coroner Dugan is to take his place. The appointment was made at the request of Mr. Ashbridge, for Mr. Dugan has been connected with the Coroner's office for nearly twenty years. The position of coroner's physician, which Dr. Henry W. Cattell resigned on his appointment as director of the Ayer Clinical Laboratory at the Pennsylvania Hospital, is to be filled by Dr. William S. Wadsworth, now Resident Pathologist at the Presbyterian Hospital and Assistant-Demonstrator of Physiology at the University of Pennsylvania.

Officials in the Board of Health, or as it is now, the Bureau of Health, are wondering when the ax will fall. The position of Chief Medical Inspector which Dr. J. Howard Taylor now holds at a yearly salary of \$2300, and that of City Bacteriologist, filled by Dr. Abbott with \$2000 a year, are two of the most important positions which medical men fill. Besides these are numerous assistants at salaries ranging from \$2000 down to \$700, and the position of Physician to the Municipal Hospital, for which Dr. Welch receives \$2000 yearly. Counting the civilian positions the political power with which Mayor Ashbridge has been invested may be imagined for these positions are, of course, more numerous than the medical ones.

The total number of deaths occurring in Philadelphia,

as reported at the Health Office, for the week ending March 25th, was 530. The total number of new cases of contagious diseases was 58, reported as follows: Diphtheria, 49 cases with 18 deaths; scarlet fever, 29 cases with 2 deaths; *typhoid fever*, 563 cases with 38 deaths.

OUR LONDON LETTER.

[From Our Special Correspondent.]

THE FINANCIAL STATUS OF THE GREAT LONDON HOSPITALS—THE NEW "ORDER OF MERCY"—SPREAD OF INFLUENZA—THE NEW SCHOOL OF TROPICAL MEDICINE—THE "LANCET" UP IN ARMS.

LONDON, March 16, 1899.

THE unsatisfactory condition of the financial status of the great London hospitals, which we noted in our last letter, has been extensively commented upon by the public press during the past week. The situation at present is that there is a yearly discrepancy of some \$500,000 between the even reasonably regular income of the ninety-three great hospitals—which consists chiefly of voluntary subscriptions—which has to be made up by legacies, bequests, and special donations, the aggregate of which often varies as much as \$400,000 between one year and the next. The Prince of Wales' Fund was started two years ago for the purpose of making good this deficit, but so far is it from doing it that its utmost annual income, both from the interest of its sinking fund and from regular annual subscriptions, barely reaches \$150,000, or less than a third of the deficit. Worse still, there is a growing conviction that much of this money instead of being clear gain, is actually drawn from the former voluntary contributions of the hospitals, attracted by the glamor of royalty and the interest of the last new thing. This has become so obvious, even to royalty itself, that H. R. H. has just launched another crusade in supplement of the original fund. This is to be known as the League of Mercy, and is to consist of a grand central council and president, with a sub-council and president for each of the parliamentary districts of London and the surrounding counties, nearly 100 in all. Each of these is to have under them thirty vice-presidents, who in turn are to be the heads of committees of twenty, each number of which is to secure annually twenty shillings from as many luckless mortals. Its a sort of mixture of the House that Jack Built and the celebrated stamp scheme. It may benefit the hospitals—pray for the peace of the community.

The feature which is expected to make it "go" is, of course, that the league is thoroughly lorded and laded, and, as far as the supply will permit, earled and countessed all over, so that, as the irreverent Radical *Daily Chronicle* remarks, it forms "the foundation of a very fashionable body, a sort of philanthropic Primrose League, affording fine opportunities for association with the aristocracy."

We wish the League every success in its noble aim, but we can hardly persuade ourselves that this mixture of fashionable philanthropy and "beggary under arms" is either the dignified or the adequate way for a great world-

city to approach the problem of the support of its hospitals. The League is also to establish an Order of Mercy, with a medal which is to be awarded for gratuitous personal services in the relief of sickness, suffering, poverty, or distress, and altogether the paths of righteousness and pure charity are to be made as flowery as possible, and virtue is to be no longer left in the disgracefully destitute condition of being its own reward.

And still the influenza spreads in London in spite of beautifully mild, bright, sunny weather for two weeks past. All practitioners report the type of the disease as quite mild, and yet the death-rate keeps steadily rising from 22 four weeks ago, to 50, 74, and last week 113 deaths per week. One cannot help suspecting that as in previous epidemics influenza, like charity, covereth a multitude of sins of careless diagnosis, and that even where it is the precipitating cause of death it acts simply by striking some previous weak point in the defences of the organism, or lighting up some smouldering internal mine like tuberculosis, fatty heart, or granular kidney. No disease in the realm of nosology threatens so much and does so little or produces so large a percentage of vivid fear of dissolution with so low a death-rate.

For the most part in this epidemic the nervous symptoms seem to predominate, and many cases are scarcely recognizable until the characteristic stage of depression sets in, and, fortunately, as might have been expected from the general absence of catarrhal symptoms, few "secondary infections" with pneumonic and bronchitic inflammations are reported. In fact, curiously enough, the total death-rate is still below the mean average for these weeks of the year, and no marked increase in the mortality from respiratory diseases has yet occurred.

Perhaps there is something in the English prejudice in favor of private enterprise and against State aid of even public schemes. While the great Chamberlain School of Tropical Medicine, which was trumpeted abroad nearly six months ago, is still meandering through the Circumlocution Office with no prospect of emergence before next October, the private Jones School at Liverpool, initiated nearly two months later, is making arrangements for its formal opening at an early date. They have just received a letter from Koch regretting that he cannot accept their invitation to be present at the ceremony, but cordially wishing the movement success, and informing them that a similar institution is about to be established in Germany.

One of the most humorous incidents of last week was the editorial protest of the *Lancet* against the alleged throwing of the Mahdi's remains into the Nile at Khartoum. It will be remembered that after the capture of the city Lord Kitchener found it expedient to order the destruction of the tomb of the Mahdi in order to at once stroke put an end to the constant prospect of a "Holy War" for the recovery of such a sacred shrine of worship, and prove to the True Believers that their alleged prophet was unable to protect his own remains from desecration. What was done with the remnants of the body is not stated, but rumor hath it that they were cast into the Nile, although it has since transpired that the skull

and several bones are now in the possession of certain officers of the victorious expedition. Of course, the Irish in Parliament, and what Kipling calls "the poor little street-bred people, who fluster and fume and brag," have been lifting up their voices in horrified protest against "desecration of the ashes of a martyr," "outrage upon the most sacred sentiments of humanity," etc. Now comes the *Lancet*, however, also in the interests of humanity, and protests, not on account of the Mahdi, but on account of the Nile, the crystal purity of whose crocodile-laden waters it regards as polluted by the reception of a "demi, unpleasant, decaying body," in the language of the immortal Mr. Mantalini. Such a bad example to set before an ignorant people whom we are endeavoring to train up in the paths of sanitary righteousness! As if it would for a moment occur to the devout Soudanese that any water could possibly be polluted by the sacred relics of their adored Prophet! Or, as a matter of fact, if a few pounds of carefully embalmed remains of 'nearly ten-years' standing could make the slightest appreciable difference in the Nile flood or to anything in it or near it, except for a few moments of bitter disappointment to the crocodiles.

The lecture season at the Colleges of Physicians and Surgeons is now in full course. Last week Dr. Brodie completed his lectures on the "Chemistry of Toxins and Antitoxins" at the College of Surgeons, and this week Dr. Parsons is giving his course on the "Comparative Anatomy of the Joints of Vertebrates." At the College of Physicians Dr. George Murray is giving three lectures upon "The Pathology of the Thyroid Gland."

TRANSACTIONS OF FOREIGN SOCIETIES.

French.

ANAEROBIC GERMS IN PURULENT PLEURISY—REMARKABLE POLYDIPSIA AND POLYURIA—DEATH DURING TREATMENT WITH SUPRARENAL CAPSULES IN ADDISON'S DISEASE—AN UNOBSERVED SYMPTOM OF TABES—THE PROPER STRENGTH OF A SALINE SOLUTION FOR INJECTION IN DISEASED CONDITIONS—CAPITONNAGE FOR HYDRONEPHROSIS AND FOR CYSTS OF THE LIVER—INFLAMMATION OF THE OMENTUM DUE TO THE USE OF SILK LIGATURES—THE PLACE OF SILK IN ABDOMINAL SURGERY.

At the Medical Society of the Hospitals, February 3d, RENDU called attention to three cases of purulent pleurisy of a putrid character in which the bacteriologic examination showed the presence of anaerobic micro-organisms either alone or in combination with aerobic germs. He obtained excellent results in the treatment of the patients by irrigations with solutions of permanganate of potassium, a substance well calculated to destroy anaerobic forms of life on account of the oxygen so easily set free from it.

AUSSET showed a boy, aged four years, who suffered from polydipsia and polyuria and an indefinite general eruption. He drank about ten quarts of water per day, passing nearly as much through his kidneys, but there was no dilatation of the stomach, and the urea in the total amount of urine passed in the day varied from 10

to 20 grams (160 to 320 grains). There was no rise of temperature and no physical signs of hysteria, unless a quick temper be accounted such. He inherited both from his father's and his mother's families, and an emotional impressionable temperament. On the whole, the speaker was inclined to set this case down as one of hysteria.

VARIOT mentioned that a patient of his, a child of three years, was in the habit of drinking three liters (quarts) of fluid per day. The stomach was much dilated. There was a well-marked history of polydipsia on the mother's side of the family, and an older sister who died at fifteen months was polydipsic and polyuric. The patient died, and at autopsy there were found the lesions of sclerosis at the summit of the liver, similar to those found in hereditary syphilis.

SOUGUES, GUINON, and RAYMOND all thought the patient presented was a degenerate rather than a hysterical individual.

BARTH said that he knew a young man aged twenty years, who, in the early years of his life, drank about twenty liters (quarts) of fluid per day. He had never shown any of the signs of hysteria.

At the session of February 24th, RENDU reported that a patient who had long presented the symptoms of Addison's disease had been put upon the treatment by suprarenal capsules, one fresh calf's suprarenal weighing 10 or 12 grams (about one-third of an ounce) being eaten each day. On the day following the administration of the first capsule the patient complained of pain on micturition and anorexia, and the urine contained much albumin. Nevertheless, the treatment was continued, and in a week, when the general state of the patient was apparently good, he suddenly died, but without uremic symptoms. The death was looked upon as a simple coincidence, although there was no reason why there should not be a certain danger in this method of treatment, just as there is in thyroid therapy.

BECLERE looked upon the appearance of nephritic symptoms during the treatment as a pure coincidence. He had completely cured a patient of Addison's disease by the administration for a long time of large doses of suprarenal capsules, and there had never been any evidence of toxic symptoms.

GILLES DE LA TOURETTE said that a manifestation of tabes which has hitherto escaped notice is the expression of the eyes. In such patients the eyes are bright, but are almost without expression. The speaker regarded this peculiarity as an early sign of the disease. The symptom is independent of the state of contraction or dilatation of the pupil of the eye.

At the Biological Society, February 4th, VAQUEZ and BOUSQUET announced that experiments have shown that a solution of sodium chlorid to have the least effect upon the blood-cells should have a strength of one per cent., and not .7 per cent., as is usually employed. The latter is called the physiologic solution because it contains the same amount of sodium chlorid as is found in the serum in health. Frequently in patients suffering from Bright's disease, eclampsia, and diabetes the amount of chlorid of sodium is 1.1 per cent., or even 1.7 per cent.

While the injection of an artificial serum slightly different from the serum present in the blood-vessels is not dangerous, it is easy to see that the injection of serum one-third less concentrated might interfere considerably with the osmotic tendency.

At the Academy of Medicine, March 7th, ALBARRAN presented a young woman upon whom he had performed a new operation for the radical cure of hydronephrosis by means of implication (*capitonage*). He reduced the capacity of the sac by suture, and by anastomosis between its lowest portion and the ureter, any obstruction to the flow of water was guarded against. The hydronephrosis was due to calculus. This was removed while the large pouches which had resulted from the obstruction to the flow of water were folded and stitched with catgut in such a manner as to greatly reduce the size of the kidney. By this method no renal tissue was sacrificed. Two months later an anastomosis was made between the pelvis of the kidney and the ureter. At this second operation it was shown that a very considerable degree of retraction had followed the implication (*capitonage*). Three months later it was shown by ureteral catheterization that the affected kidney held only 8 grams ($\frac{1}{8}$ ounce) of fluid, whereas it had formerly held 400 grams (over 13 ounces).

At the Surgical Society, January 18th, DELBET showed a patient upon whom he had performed implication (*capitonage*) four months previously for a hydatid cyst of the liver. The entire pouch was sutured. The day after the operation the patient presented grave symptoms which were ascribed to intra-peritoneal hemorrhage, but which were really due to a hydatid intoxication. The patient entirely recovered. This is the sixth case which has been so operated upon by Delbet. The results in every instance were satisfactory.

At the session of February 1st, Delbet contrasted the results of this method of treatment with those obtained by permanent drainage (*marsupialisation*). In eight patients so treated three were troubled with a fistula for two months or more, while another, whose wounds healed, suffered from the formation of a fistula at a later period. It is evident, therefore, that drainage of a hydatid cyst is not the best form of treatment, and in all cases in which it is possible Delbet avoids drainage of any sort.

At the session of February 15th, MONOD called attention to the bad results which may follow the use of silk ligatures upon the omentum. He performed a radical operation for hernia upon a male patient, resecting a large portion of the great omentum and ligating its stump with silk. He made a good recovery and left the hospital in one month apparently in perfect health. Two weeks later he came back with intense pain in the left side of the abdomen where there was a well-defined swelling, extremely painful, situated just below the left costal margin. In the center of the swelling peristaltic motion could be made out. By a second laparotomy Monod relieved the obstruction to the transverse colon caused by the epiploitis.

REYNIER said that the epiploitis had doubtless been

caused by a septic ligature. In order to avoid such accidents he employs catgut rather than silk.

TUFFIER mentioned a case in which a large part of the omentum was resected during a radical operation for hernia. There was a large tumefaction in the left flank, but this subsided without suppuration, and in six weeks had entirely disappeared.

GUINARD mentioned three cases of epiploitis following resection of the omentum. In two cases an abscess formed and was opened intraperitoneally. In the third case resolution took place without suppuration.

POZZI said that such cases as those cited show that the use of silk in abdominal surgery is a dangerous practice. He considered it equally reprehensible to ligate the adnexa with silk, expressing the opinion that a large part of the morbid phenomena which are attributed to ovarian castration are due in reality to silk ligatures. For three years he has not used silk in abdominal surgery excepting for intestinal sutures.

HARTMANN thought that the ill effects mentioned might not have followed if a smaller silk had been employed.

SOCIETY PROCEEDINGS.

NEW YORK ACADEMY OF MEDICINE.

Stated Meeting, Held Thursday, March 2, 1899.

DISCUSSION ON SYPHILIS.

THE President, DR. WILLIAM H. THOMSON, in the Chair.

The first paper of the evening on

THE TREATMENT OF SYPHILIS IN ITS EARLY STAGES

was read by DR. L. BOLTON BANGS. He considers mercury not a specific for syphilis nor a direct antidote to its poison, but an excellent remedy for the symptoms. The most necessary thing in the treatment of syphilis is to keep the patient at the very highest level of health. Patients must live carefully and hygienically. This is the first essential. Some recover from the disease without this hygienic care but they are constantly running a great risk. At one time we thought potassium iodid as valuable as mercury but we know now that mercury sets up a fatty degeneration of the morbid products of syphilitic processes and thus leads to their absorption, while the iodids only increase absorption. Hence potassium iodid is indicated only in nervous lesions where fatty degeneration is unusual and would be harmful in states in which absorption is disturbed. Other absorbent remedies are also good on this same principle and their use should be recommended; hot baths, douches, massage, etc., all have a place in the treatment.

It must always be remembered, however, that it is patients with syphilis, not cases of syphilis that we have to treat. Every patient will have a special idiosyncrasy; in some the mouth will be often and seriously affected, in others the skin or bone and nerve lesions will manifest themselves early, etc.

As to the initial lesion Dr. Bangs always advises its

excision if it is favorably situated for removal. At least a mass of infective material is thus removed. Mercurial preparations lead to the absorption of the initial lesion so treatment should be begun at once. There are those who hesitate as to this and wait till the development of secondaries. Immediate treatment, however, keeps the patient in the best condition. As soon as we are certain of the presence of the disease begin to combat it, and as the primary and secondary lesions are the same histologically, begin treatment at once. Care is needed and the vulnerability of the patient must be consulted. There are at work in him the poison of the disease as well as the toxic drug.

As to the method of administration of the drug, by the mouth seems the best. It should be pushed to its physiological effect but should not be allowed to disturb the stomach. After a while the doses should be increased, because continuance begets custom. After administration by the mouth the method by inunctions comes next but it is hard to get patients to obey directions in this matter. When the symptoms are rapid, fulminant, and there is breaking down of tissue, subcutaneous injections should be given, but with the greatest care as death has been known to result from them.

As to length of treatment, so long as the epitrochlear glands are enlarged, in a case that has been followed from the beginning and the enlargement is known to be due to the syphilis, treatment should be persisted in. If a number of glands throughout the body are enlarged, even without a history of syphilis, suspect its presence and treat for it. Treatment should last at least three years.

DR. R. W. TAYLOR then read a paper on

THE TREATMENT OF SYPHILIS IN ITS EARLY STAGES.

This subject practically resolves itself into the treatment of secondary syphilis. Vicious methods of treatment crept in in the first half of the century; too much mercury was administered. An unfortunate, because too radical, reaction against this began about thirty years ago. The pendulum, as usual in matters therapeutic, swung too far and Ricord's methods were too much condemned and rejected. This reaction is with us yet in the treatment of syphilis by small doses of the insoluble preparations of mercury by the mouth. All these metallic compounds must be converted into peptonates and albumenoids to be absorbed and this causes a great strain on digestion. After a while they are not absorbed and this can be shown by careful analysis of the patient's excreta. They do great good at first but gradually become inert. He has for some time, therefore, given up the French interrupted method of treatment.

Treatment is indicated when the heterologous new-cell formation has begun and when the syphilitic toxins are being elaborated in the system. These processes begin when the secondaries make their appearance, so that this is the time and not before this to begin treatment. Until generalization of the syphilitic process in the system has occurred the mercury has very little to work on and does very little good. For mercury does not foster resistance to syphilitic poison in the system by anticipation but on

the contrary creates a tolerance to its own action and so dulls its subsequent effect, when acuity of effect is most desired. Second, it does not suppress but retards and disturbs the order of symptoms, and this nearly always has an unfortunate effect on the subsequent course of the disease. Third, the patient should be allowed to see for himself the eruption and the enlargement of the glands. He will then realize thoroughly the constitutional nature of the disease and will follow the instructions for treatment; without the actual presence of these general symptoms he will scarcely be persuaded to submit to the inconvenience necessary for proper therapeutics. Fourth, errors as to the specificity of a supposed primary lesion are possible, even in an expert syphilologist's hands, so that it is always advisable to await the absolutely confirmatory secondary symptoms. Many a case of indurated sore has proved not to be specific and premature treatment in these cases hangs an awful cloud over a patient's life for nothing. Fifth, there is no benefit to be gained by very early treatment. Without it the course of the disease is more orderly, its symptoms more manageable; finally a very important consideration, there will be no haunting doubt left in the physician's mind as to the absolute character of the disease, if he has seen the unmistakable secondary symptoms.

When the general rash appears then is the time for treatment. In ninety-five per cent. of the cases the backbone of the disease may be effectually broken by vigorous yet judicious treatment at this time. Treatment for six months at this time is more effective than a whole year of treatment later on. It is to be remembered that syphilis runs a much severer course in delicate, nervous, anemic individuals, in the tuberculous, etc., and general treatment calculated to improve these conditions may have a place while waiting for secondaries to make their appearance. In women all syphilis seems to run a milder course and this is especially true of nervous syphilis.

It is syphilitic patients, not cases of syphilis that are to be treated, so that no iron-clad therapeutic routine for every case should be adopted. Treatment must be especially managed so as not to produce disgust or annoyance in the patient for he is already disposed by his condition to sufficient discouragement. At the beginning protoiod of mercury in the usual doses may be given or the tannate of mercury in $\frac{1}{2}$ -grain doses three times a day, which has given excellent results. A fair estimate as to its effect may be obtained in fourteen days or so and the advisability of continuing the method decided. As the rash declines inunctions should be advised, as at this period the patient will be more willing to submit to the inconvenience of local treatment and so becomes accustomed to the method.

Papular and pustular lesions of hairy localities should be treated separately because of the dangers they involve of reinfection. About a dram of mercurial ointment should be used each day for fifteen days and then an interval of fifteen days allowed. The study of the excretions shows that mercury is eliminated for a month after such a course of treatment. Rest, of course, is important, not absolute rest but sufficient to keep in the

best possible general condition. A vacation at the sea-shore, hot and Turkish baths, but without the cold plunge, and all general hygienic measures are, of course, excellent. The administration of potassium iodid must not be delayed too long. It may be employed at first in the intervals of the mercurial treatment. It increases absorption and prevents that cell proliferation which leads to specific bone disease, pleurisy, etc.

After a year patients will seem perfectly well but no chances should be taken, and treatment should be continued in the second year for two to three months at a time with intervals of six to eight weeks so that there will be eight months of active treatment during the year.

The speaker was of the opinion that after careful persistent treatment in this way for two to two and a half years the patient may be pronounced perfectly well. When symptoms are rapid and there is an early malignant character manifest in the disease so that tissues begin early to break down and continue to do so despite ordinary treatment, then subcutaneous injections of bichlorid must not be forgotten. They give excellent results under such circumstances and must be recognized as an efficient addition to our therapeutics of syphilis.

The next paper was on

DIFFERENTIAL DIAGNOSIS OF SYPHILITIC ERUPTIONS AND SIGNS IN THE SKIN OF FORMER SYPHILIS,

illustrated by lantern-slides and was read by DR. GEORGE H. FOX. The illustrations gave a series of characteristic lesions of the disease as seen in a large clinical service. The multiform character of the disease was shown, yet the typical something present in practically every case despite all its multiformity, that betrayed the specific nature of the lesions was clearly brought out. The symmetrical arrangement of the cutaneous syphilides was especially illustrated. Gummatous and ulcerative lesions were pictured and the characteristics that distinguish syphilitic ulcers from lupoid or simple ulcerative processes pointed out.

The persistent circinate character of individual syphilitic lesions was brought out and the tendency of groups of lesions to arrange themselves frankly as circles, advancing at the periphery and healing at the center, or as arcs of circles or in serpiginous curves was fully illustrated. The diagnostic value of lesions in the upper third of the leg and around the knee and of scars in this region, especially when symmetrical, was pointed out. In cases without a history of syphilis the diagnosis may be made from this point alone.

DR. R. H. M. DAWBARN in his paper on

STIGMATA OF SYPHILIS IN CHILDREN

said the mortality of congenital syphilis is so great that the best hope of treatment lies in early diagnosis of the disease. In the list presented at the last International Medical Congress at Moscow, out of 2000 cases only 25 per cent., 1 out of 4, syphilitic children survived, while out of 40 cases of acquired syphilis in children recently reported all are now living and well. The earlier treatment is instituted the better the prognosis, hence the necessity for earliest possible diagnosis. Dr. Dawbarn has

collected from his own experience and the abundant literature of the subject, some 27 stigmata of syphilis that aid in early diagnosis, many of them serving to arouse suspicion of the existence of the disease when circumstances are such that it is running a latent course. Not all of them are present in any one case; most of them are not pathognomonic of syphilis, but serve only in connection with other signs to confirm the diagnosis.

Twenty-Seven Stigmata of Congenital Syphilis.

1. The description given by Diday. The syphilitic child is wrinkled and drawn in features, with a yellowish-brown *café-au-lait* color, though with it all the child may not be poorly nourished, but on the contrary may be plump and rounded.

2. Thick umbilical cord, often over long and slow to fall, leaving the child liable for a longer time than usual to septic infection through the navel.

3. Pemphigus, consisting of bullæ and blebs, at times invading the palms and soles, consisting usually of lesions vesicular in character which may be small discrete elevations but sometimes large and confluent.

4. Erythema-syphilitic roseola, invading first usually the lower abdomen, coming on commonly about the third week. Then the copper-colored patches, syphilitic penies, as they have been called, though syphilitic farthing-pieces would be a better name. They are oftenest about the size of the babies' finger-nails. Cutaneous syphilides however, occur in only 25 per cent. of the cases of congenital syphilis.

5. Condylomata.

6. Coryza. An attack of snuffles is always suspicious in the new-born; when it persists it is almost pathognomonic. A well-known woman novelist has given great publicity to the phrase "a little old man with a cold in his head," so picturesquely descriptive of the syphilitic child.

7. Laryngeal symptoms, especially a hoarse cry.

8. Mucous patches.

9. Stomatitis especially when it becomes generalized. Hold considers a general stomatitis as a constant symptom of congenital syphilis.

10. Do not be deceived into a false sense of security as to syphilis by the absence of enlarged glands. Lymph nodular enlargement is usually absent in congenital syphilis.

11. Hemorrhages, subcutaneous or from mucous membranes.

12. White pneumonia, though this is a post-mortem sign and the specific nature of the pneumonia can only be suspected during life.

13. Hepatic enlargement but without jaundice.

14. The spleen is enlarged in over half the cases. It has been known to reach four times its normal size in three weeks.

15. The ground-glass cornea is pathognomonic. Other eye lesions occur, as iritis, but the keratitis is of most value.

16. Middle-ear disease. It is to be remembered that the Hutchinson triad of symptoms is the notched teeth,

the specific keratitis and deafness, or middle-ear symptoms without known cause.

17. Alopecia, so that the infant looks like a badly plucked fowl.

18. Orchitis.

19. Neuroses, especially epilepsy and any and all forms of palsy.

20. Bone lesions. The first and most important, the syphilitic osteochondritis of the epiphyses. Child's bones are sore. It is tender when handled. Later rickets not infrequently develops.

21. Syphilitic periostitis, the syphilitic nodes of Parrott.

22. Syphilitic dactylitis.

23. Peculiar onychia.

24. The teeth come early and decay easily and soon. It used to be said that it was unlucky for a child to be born with teeth. The foundation for the old saw would seem to be that the irritation of the osteogenic and kindred systems set up by the syphilis toxins causes early development of the teeth. Needless to say that the un-luckiness of the symptom is evident in this case.

25. The Hutchinson teeth. In the permanent set of teeth the upper central incisors are pegged, apt to be separated and are notched, the enamel having disappeared from the central portion of the cutting edge. They do not always occur after congenital syphilis but only where there has been a good deal of severe and generalized syphilitic sore mouth.

26. Irregularities and asymmetry of the bony skeleton. This is often very noticeable and endures through life, constituting a stigma by which congenital syphilis may be suspected though there is no history, long years after any acute manifestations of the disease have disappeared.

27. Other enduring stigmata of congenital syphilis are bosses on the skull nodes on the long bones especially easy to recognize on the surface of the tibia, chronic fissures of the corners of the mouth or the whitish contracted cicatrices they leave after them; scars on the upper third of the legs, the remains of old syphilitic ulcers, especially significant if symmetrical.

Meeting of Thursday, March 9, 1899.

(Continuation of the Discussion on Syphilis.)

The first paper of the evening, entitled

SYPHILITIC AFFECTIONS OF THE HEART AND LUNGS, was read by DR. LEONARD WEBER. Syphilitic affections of the heart are more frequent than those of the lungs and by a fortunate coincidence the treatment of syphilitic cardiac affections is much more successful than pulmonary syphilitic complications. Heart affections, as Adler has shown, occur alike in hereditary and acquired syphilis. In general syphilitic affections of the heart they do not occur so infrequently as is thought. The gumma or gummi, as Virchow insists it should be called, occurs quite often in the course of the disease, and endo- and peri-arteritis and endocarditis occur at times, as also a fibrous interstitial myocarditis. Gumma is the only characteristic lesion. Ehrlich has shown that hemorrhage may occur into the heart substance displacing the fibers, hampering their

function, and leading to fracture of the fibers during exhaustive efforts at contraction.

Wherever there is visceral syphilis vascular syphilis also occurs and usually some syphilitic affection of the heart. The diagnosis of cardiac syphilis without external stigmata of the disease is practically impossible. When in doubt it may be made *ex juvantibus*. In young patients with irregular hearts and tendency to dyspnea with no history of rheumatism or other infection it is well not to forget syphilis. Potassium iodid and mercury will often do good. Sometimes these syphilitic heart cases in the young simulate neurasthenia very closely, or genuine neurasthenia with cardiac symptoms develops in consequence of the constitutional disease.

Among the pulmonary affections due to syphilis may be considered a proliferating tracheitis. The speaker has seen three cases of lung syphilis in women who had borne dead syphilitic children. White pneumonia and gumma of the lung are seen post-mortem but cannot be diagnosed with any probability during life. We need for the assured diagnosis of syphilitic conditions in the lungs the discovery of the syphilis bacillus so that we may demonstrate it in the sputum as we do for tuberculosis now.

PROFESSOR J. GEORGE ADAMI of McGill University, Montreal, then read a paper, entitled
SYPHILITIC AFFECTIONS OF THE LIVER IN ADULTS AND IN CHILDREN.

For the pathologist there is no distinction between the secondary and tertiary lesions of syphilis, though the division of the disease into these stages may still be useful to the clinician. Apart from the granulomata characteristic of the disease there is a generalized tissue disturbance that must be borne in mind. Syphilis in infants is congenital, not inherited. It is acquired by the fetus, not present in one of the germinal elements. As the analogy of syphilis with tuberculosis becomes more complete this fact becomes surer. There are a number of observations that go to confirm this view.

The maternal blood is carried first to the liver; if syphilis were acquired by the fetus we would expect to find this organ often affected. As a matter of fact Chiari of Prague in 122 out of 144 cases of congenital syphilis did find syphilitic affections of the liver in children examined carefully for this purpose. This view of the acquirement of so-called hereditary syphilis may seem heretical, but Professor Adami holds firmly to it. The continuation of the idea of real heredity in the matter seems but the perpetuation of a vulgar error. It is absurd to think of the germ of syphilis as latent in the ovum until the fetal period begins. Even if it were so the presence of syphilis would not be due to heredity but would be an epiphenomenon manifesting itself in a special ovum.

The most usual and earliest focal lesion in the livers of children is a collection of round cells. Comparatively early in the disease miliary gummata develop. When the liver exhibits what are usually called tertiary lesions the skin may be passing through the secondary period. Fibrosis of the liver develops relatively early. Flexner

working along the lines laid down by Adami gives bacteria a place in sclerotic changes in the liver and they play a rôle in the early development of fibrosis in syphilitic hepatitis. The fibrosis may be the result of an attempt to wall off and protect the organ from invasion or may be due to the irritation of toxins produced during the course of the disease.

Changes in the liver of children due to syphilis are much easier to classify and recognize with assurance than those of adults because the etiological problem is simpler. Other and sometimes unknown factors have not been at work and besides the time of their development can reasonably be presumed from the age of the child. The varieties of syphilitic liver affections in children are about as follows: (1) Those due to granulomatous processes or to interstitial change. (2) Minute multiple miliary gummata or isolated large ones. (3) Fibrous changes due to the irritation of toxins.

In later life the classification of syphilitic affections of the liver is not so easy. It is evident that when the secondary cutaneous lesions make their appearance lesions of the same general character are to be looked for in the viscera. These visceral changes are not, however, very noticeable or we would know more of them. Autopsies at this stage of the disease are rare and so far only the gross morbid appearances of the internal organs have been studied, the early visceral lesions being as a rule microscopical in character and not noted. This is a line of work in which great things are to be hoped for from the present universal attention to minute pathological histology.

Fagge has reported a case of indurated liver in the adult, a cirrhotic change not unlike the condition that develops in syphilitic children. It must be borne in mind that the liver is an excretory organ and as such especially liable to be flooded with the toxins of any diseased processes at work in the body. The presence of these toxins as they develop in a catarrhal hepatitis may give rise to jaundice though, of course, the jaundice may be obstructive in origin due to the pressure of enlarged glands in the hilum of the liver or to syphilitic nodular involvement of liver tissue.

Tertiary syphilis of the liver after gummatous inflammation gives rise to scars and fibroid puckerings of the organ which represent the lesions of an obsolete syphilis. In very old cases the obsolescence of the lesions has sometimes gone on to such a degree that reabsorption of the fibrous tissue has taken place so that only the puckerings remain as larval substitutes for the old process. Gummata may be large or may be small—miliary in size and may be found in the second year or may be met with long years after infection.

The hepatic lesions in the adult may be summed up about as follows: (1) Gummata. (2) Miliary lesions gummatous in character. (3) Parenchymatous hepatitis. (4) Interstitial hepatitis causing syphilitic cirrhosis. (5) Obsolete gummata. (6) Puckerings of liver substance, the stigmata that remain after obsolete gummata, though all trace of the fibrous tissue that existed here after the formation of the scar that followed the gummata has

been removed by absorption. (7) Tumor-like outgrowths of liver substance simulating very closely on palpation malignant growths, and not rarely leading to mistakes of diagnosis. Usually in these tumorous formations there is an outer layer of normal hepatic tissue surrounding gummatous deposits, the pathological material at the center of the lesion being sometimes broken down or in certain stages of degeneration.

In general in adults the tendency of syphilis is toward the production of focal lesions; in children the fibroses predominate and the tendency is to the production of diffuser pathological conditions. The liver is especially affected in nearly all cases because of its importance as an organ of excretion. Hence the toxic products of the disease are delayed here during the metabolic process and effect the injury of tissue noted. In the fetus the liver first receives the blood from the placenta and so is especially liable to be affected by the disease-products from a syphilitic mother. In the liver more than anywhere else it becomes clear that it is impossible from a pathological standpoint to draw any hard and fast lines between secondary and tertiary symptoms of syphilis.

(To be continued.)

REVIEWS.

AFFECTIONS CHIRURGICALES DU TRONC. By DR. POLAILLON, Chirurgien de l'hôtel-Dieu; Professeur-agrégé à la Faculté de médecine de Paris. Paris: Octave Doin, 1898.

THE first volume of this treatise on surgery of the trunk, published in 1896 and devoted to the thorax and its contents, has been reviewed in these columns. The two concluding volumes of this series now under consideration deal, respectively, with the surgery of the abdomen and its viscera, and the pelvis and its contents.

The work partakes of the nature of a statistical account with summaries and short observations of the most important cases. Both volumes are replete with rare and commonplace affections, many of which have been previously reported in current French periodicals.

Treatment, more than etiology or pathology, is considered, and above all, there is a striking absence of bacteriologic data; yet this deficiency is compensated for in part by the careful clinical data, being the experience of the author and his assistants for a period of nineteen years. It is, therefore, from the clinical standpoint that these two volumes commend themselves to the surgeon.

REPORT ON THE INVESTIGATIONS INTO THE PURIFICATION OF THE OHIO RIVER WATER AT LOUISVILLE, KENTUCKY. By GEORGE W. FULLER, Chief Chemist and Bacteriologist to the Louisville Water Company. New York: D. Van Nostrand Company, 1898.

THIS work, which deals principally with the bacteriological and chemical investigations of Ohio River water, both before and after filtration, is one of vast scope. All modern filters have been carefully tested and the results obtained are of vast importance to the specialist inter-

ested in the water-supplies of large cities. It is remarkable to note what enormous advances the filtration of waters has made since the introduction of the process in London seventy years ago, and what perfection it has attained in that comparatively short interval of time.

Several chapters are devoted to a subject of considerable importance to large and small towns having need of water filtration, dealing also with the cost of the various systems and their respective efficiency. Much space is devoted to the methods of electrical purification. Chapter XV., on the "Description of the methods and devices of the water company, tested during 1897, and a record and a discussion of the results accomplished therewith," gives us the whole plan of Mr. Fuller's experiments, and the form in which they are presented is very clear and impressive.

The conclusions reached by Mr. Fuller after his most careful researches, are that the employment of coagulants, subsidence and filtration "is applicable to the satisfactory purification of the Ohio River water at Louisville," but he does not recommend the direct use of either the Warren, Jewell, or Western Systems. The appendix deals with the methods used for collection of samples and for analysis in a most concise manner. The work is well indexed, and the plates, which complete the volume, are most ably executed.

MANUAL OF ORTHOPEDIC SURGERY. By STEWART LE ROY MCCURDY, A.M., M.D., Orthopedic Surgeon to the Presbyterian Hospital and East End Free Dispensary, Pittsburgh. Pittsburgh: Published by the Author, 1898.

THE author is to be congratulated upon having produced in this small convenient volume of 336 closely printed pages more than a summary of the subject without a sacrifice of clearness in view of the terse style adopted. Definitions are concise, and classifications complete but little discussed.

The following are some of the features derogatory to the general merits of the work: The illustrations are poor and many familiar ones produced from other works are not duly credited. Among typographical errors we note "kyphose" for "kyphosis," and "coxa vera" for "coxa vara," and the misspelling of the proper names of Burns for Bruns and Mikrelcy for Mikulicz.

Though cognizance has been taken of most of the advances in orthopedy yet gouty arthritis, habitual dislocation of the shoulder-joint, and achylodynia receive no mention. The names of such authorities as Tallerman-Sheffield in hot-air treatment, and that of Kassowitz in connection with rickets are passed over. The treatment recommended is sound, yet we must challenge such scientific vagaries as are mentioned on pp. 63 and 69, viz.: that tubercular abscesses can be cured by the external applications of ointments. The chapter on infantile scurvy (Barlow's Disease) is rather confused, and much of the matter therein contained is foreign to it, and belongs under the head of rickets where it is found wanting. In connection with congenital dislocation of the hip nothing is said of Lorenz's method of bloodless reduction unless

we infer the author to hold the method of Paci as identical with it, which then is certainly a faulty conception. With due allowance for these deviations in this first edition we endorse this manual as worthy of the perusal of the student.

THERAPEUTIC HINTS.

Expectorant Mixture.—

℞ Apomorphin. hydrochlorat.	gr. ss
Ac. hydrochlorici dil.	m. xxx
Syr. simpl.	3 vi
Aq. dest.	3 vi.

M. Sig. One tablespoonful every 2 to 4 hours. For a child, one teaspoonful at the same intervals.—*Beck.*

For Dental Periostitis.—

℞ Tinct. iodi	} aa	m. lxxx
Tinct. opii		
Tinct. gallæ		
Ac. carbolicæ		m. viii.

M. Sig. For painting on the gums twice a day.

—*Witzel.*

For Cardiac Pain in Hysteria.—

℞ Tinct. valerianæ	3 ss
Liq. ferri chloridi	m. lxxx.

M. Sig. Twenty drops in water three times a day.

—*Gerhardt.*

For Bad-sores.—

℞ Zinci sulphat.	gr. xlv
Plumbi acetat.	3 iss
Tinct. myrrhæ	m. xx
Vaselinæ alb.	q.s.ad. 3 ii.

M. Sig. External use.

For Sleeplessness in Imbecile Children.—

℞ Urethani	gr. xxiv
Glycerini	3 i
Aq. menth. piper.	q.s.ad. 3 i.

M. Sig. One teaspoonful three times a day. (For a child 5 to 10 years old.)—*Freyberger.*

To Relieve Itching in Measles and Scarlatina:—

℞ Ac. carbolicæ	parts i
Ol. olivæ	parts xl.

M. Ft. linimentum. Sig. External use.—*Goodhart.*

For Scabies.—

℞ Styraçis	3 ss
Spiritus	m. lxxx
Ol. Olivæ	3 i.

M. Ft. linimentum. Sig. For inunction.—*Liebreich.*

Aromatic Mouth-wash.—

℞ Tinct. catechu	} aa	m. lxxv
Tinct. myrrhæ		
Tinct. lavandulæ comp.		
Ol. menth. piper.	} aa	m. viii
Ol. anisi		
Spiritus dil.		

M. Sig. One teaspoonful in a glass of water for rinsing the mouth.